

"Beijing Noitom Technology Ltd"

119 results Offices all Languages en Stemming true Single Family Member false Include NPL false

Sort: Relevance

Per page: 200

View: All

1 / 1

Machine translation

1. [20180216959](#) A COMBINED MOTION CAPTURE SYSTEM

US - 02.08.2018

Int.Class [G01C 25/00](#) Appl.No 15505923 Applicant Beijing Noitom Technology Ltd. Inventor Ruoli Dai

A combined motion capturing system comprises multiple inertial sensor units [101], at least one communication unit [102], and a terminal processor [103]. The inertial sensor units [101] are connected to the communication unit [102]. The communication unit [102] is connected to the terminal processor [103]. The inertial sensor units [101] are mounted at positions of one or more motion capture objects according to different combination modes, and measure motion information of the positions where the inertial sensor units [101] are mounted, and send the motion information to the communication unit [102]. The communication unit [102] receives the motion information output by inertial sensors, and sends the motion information to the terminal processor [103]. The terminal processor [103] acquires information about the motion capture objects and mounting position information of the inertial sensor units [101], generates combination modes of the inertial sensor units [101] according to the information of the motion capture objects and the mounting position information, receives the motion information sent by the communication unit [102], and processes the received motion information according to the combination modes to acquire complete postures and the motion information of the motion capture objects. By freely combining the same set of motion capturing devices, different motion capturing objectives are achieved, and the cost is reduced.

2. [20170110026](#) MULTI-NODE MOTION MEASUREMENT AND ANALYSIS SYSTEM

US - 20.04.2017

Int.Class [G09B 19/00](#) Appl.No 15208028 Applicant Beijing Noitom Technology Ltd. Inventor Haoyang Liu

A multi-node motion measurement and analysis system comprises at least one motion measurement module and a receiver unit. The motion measurement module is bound to a hand-held sports appliance through an adjustable fixture or being bound to a human body. A binding position on the human body is rearrangeable based on different measurement requirements. The motion measurement module comprises a sensor module configured to measure information of acceleration, angular velocity and magnetic force, a first microprocessor module connected to the sensor module and configured to generate information of orientation, and a first RF module configured to receive the information of acceleration, angular velocity, magnetic force and orientation and transmit the received information to the receiver unit. The receiver unit generates motion information according to the information of acceleration, angular velocity, magnetic force and orientation, and calibrates the motion measurement module bound to different positions on the human body.

3. [20180089841](#) MIXED MOTION CAPTURE SYSTEM AND METHOD

US - 29.03.2018

Int.Class [G06T 7/277](#) Appl.No 15817373 Applicant Beijing Noitom Technology Ltd. Inventor Ruoli Dai

A mixed system for capturing motions of an object and its use method is disclosed. The mixed system includes at least one inertial sensor module and at least one optical marker mounted on the object, and at least two optical cameras. Each inertial sensor module measures inertial information and spatial attitude information, and each optical camera captures image information of the at least one optical marker. Based on the collected information, a receiving processor respectively generates inertia-based position information and optics-based position information, and further integrates the above information to obtain position information of the object. Integration may involve assignments of different weights to the inertia-based position information and the optics-based position information based on respective measurement errors of the at least one optical marker and the at least one inertial sensor module. The inertia-based position information may be corrected based on biomechanical constraints and/or external constraints.

4. [206863688](#) DRESS DEVICE, GLOVES, MOTION CAPTURING DEVICE AND VIRTUAL REALITY SYSTEM

CN - 09.01.2018

Int.Class [G06F 3/01](#) Appl.No 201621129948.8 Applicant BEIJING NOITOM TECHNOLOGY LTD. Inventor DAI RUOLI

The utility model discloses a dress device, gloves, motion capturing device and virtual reality system. The wearing device includes: dress the body, at least one joint portion, at least one joint portion set up in dress the body, the connecting piece has a left side connecting hole and right connecting hole down, the meshbelt includes: in the main meshbelt in a left side, the first end of left main meshbelt were fixed in the back, the second of left main meshbelt was held out and is passed a left side connecting hole and after -fixing in the body of the main meshbelt in a left side that turnsback down behind the back, and the youzhu meshbelt, in the first end of youzhu meshbelt was fixed in the back, the second of youzhu meshbelt was held out and is passed the right side connecting hole and after -fixing in the body of youzhu meshbelt that turns back down behind the back. The joint portion is used for attaching to the wearing body with the electronic component like inertial sensor andso on. The utility model discloses a dress the device, through the joint portion can with electronic component attached to on dressing the body, this wearings device just can be worn required electronic component through once simple and convenient wearing process and target in place.

5. [206470692](#) LIGHT THOUGHTLESSLY MOVES CATCHES DEVICE AND VIRTUAL REALITY SYSTEM

CN - 05.09.2017

Int.Class [G06F 3/01](#) Appl.No 202016001474701 Applicant NOITOM LTD. Inventor LI LONGWEI

The utility model discloses a light thoughtlessly moves catches device and virtual reality system, light thoughtlessly move and catch the device and include a plurality of function element and jacket and/or trousers, jacket and/or trousers all include: the inlayer, it is used for attachedly in the human body, the skin, it is located outside the inlayer, and the align member, its set up in the inlayer with between the skin, the align member is used for setting up the function element so that the function element is passed through the align member is attached on the human body. Owing to set up the align member between inlayer at jacket and trousers and the skin, when the dress of wearing person the utility model discloses a light thoughtlessly moves when catching the device, even the wearing person carries out great action, the function element can not produce too big dislocation with the human body yet, and when function element during for the inertial sensor that is used for motion capture, the data that this inertial sensor caught are comparatively accurate.



6. [108181998](#) OPTICAL MOTION CAPTURE TRACKING MODULE

CN - 19.06.2018

Int.Class [G06F 3/01](#) Appl.No 201810230188.7 Applicant BEIJING NOITOM TECHNOLOGY LTD. Inventor DAI RUOLI

The embodiment of the invention relates to an optical motion capture tracking module which comprises a base and at least three reflective assemblies in spatial distribution, wherein spatial arrangements of the at least three reflective assemblies are asymmetrical; the spatial arrangements are used for performing unique identification on the optical motion capture tracking module and performing unique determination on the position and attitude of the optical motion capture tracking module in the space; and the at least three reflective assemblies are mounted on the base and protrude out of the surface of the base. According to the embodiments of the invention, by virtue of the at least three reflective assemblies in spatial distribution mounted on the base, motion capture equipment in a VR scene is capable of collecting reflected light of the reflective assemblies, and a VR computer can further distinguish different optical motion capture tracking modules and positions and attitudes thereof according to the reflected light. When different optical motion capture tracking modules are used by different users, the VR computer can meet simultaneous experience of multiple users and interaction among the users in the same simulation environment on the basis of identifying different optical motion capture tracking modules.

7. [207637100](#) HAND -HELD DEVICE

CN - 20.07.2018

Int.Class [G06F 3/01](#) Appl.No 201820381990.1 Applicant BEIJING NOITOM TECHNOLOGY LTD. Inventor DAI RUOLI

The embodiment of the utility model provides a relate to the virtual reality technology field, concretely relates to hand -held device can include: rigid body, VR controller and handle. Install the rigid body through set up rigid body mounting structure on handle casing, the rigid body can be discerned by the VR computer. The the first window that user's accessible handle casing surface set up controls the VR controller, and VR computer obtain handles the VR scene after controlling the signal, realizes the mutual of user and VR scene. Owing to install the rigid body on the handle, the VR computer is through the discernment to the rigid body to based on the corresponding relation of rigid body and VR controller and then can to confirm to control the signal be from which the VR controller sends. In same VR scene, different users can hold different handles, handle installation rigid body and VR controller, can satisfy that a plurality of users experience simultaneously and each other alternately.

8. [111537953](#) POSITION DETERMINATION METHOD AND DEVICE

CN - 14.08.2020

Int.Class [G01S 5/06](#) Appl.No 202010301569.7 Applicant BEIJING NOITOM TECHNOLOGY LTD. Inventor WANG KAN

The invention relates to the technical field of virtual reality, in particular to a position determination method and device. The position determination device comprises a reference part and at least three position measuring mechanisms, and each position measuring mechanism is used for obtaining the spatial position of the reference part and the spatial position of an object to be measured relative to the position measuring mechanism so as to obtain a relative position relation between the object to be measured and the reference part. In the process of measuring the spatial position of the object to be measured by adopting the position determination device, even if the position of the measuring mechanism is changed, the accuracy of a measuring result is not influenced basically.

9. [109767469](#) AN INSTALLATION RELATION CALIBRATION METHOD AND SYSTEM AND A STORAGE MEDIUM

CN - 17.05.2019

Int.Class [G06T 7/70](#) Appl.No 201811641978.0 Applicant BEIJING NOITOM TECHNOLOGY LTD. Inventor ZHOU FENG

The invention relates to an installation relation calibration method and system and a storage medium. The calibration method comprises the steps of obtaining the first position posture information of a calibration tool fixedly connected with a tracked object; obtaining second position and attitude information of the tracked object; acquiring third position and attitude information of the tracking module; and calculating a position and attitude conversion relationship between the tracking module and the tracked object as an installation relationship. According to the embodiment of the invention, the position and attitude information of the calibration tool is acquired, so that the position and attitude information of the tracked object is obtained according to the position and attitude information of the calibration tool; the position and attitude information of the tracking module is then obtained; the installation relation between the tracked object and the tracking module is obtained according to the position and the attitude information of the tracked object and the tracking module, errors, caused by machining installation precision or material deformation, of the installation relation between the tracking module and the tracked object are avoided by introducing a third-party calibration tool, and the more accurate installation relation between the tracking module and the tracked object is given.

10. [207636849](#) HAND -HELD TYPE HEAD DISPLAY INSTALLING FRAME

CN - 20.07.2018

Int.Class [G02B 27/01](#) Appl.No 201820081277.5 Applicant BEIJING NOITOM TECHNOLOGY LTD. Inventor GUO CONG

This discloses the embodiment and relates to hand -held type head display installing frame, and this hand -held type head display installing frame can fix a position the head display for people's eyeregion through handheld mode. Compare in prior art, fix the regional mode of people's eye with the display through the mode that the head was bound, can reduce and wear the degree of difficulty to improve comfortable degree.

11. [208271322](#) CABIN IS EXPERIENCED TO VR SCENE

CN - 21.12.2018

Int.Class [G07F 17/14](#) Appl.No 201820523399.5 Applicant BEIJING NOITOM TECHNOLOGY LTD. Inventor DAI RUOLI

The embodiment of the utility model provides a relate to the virtual reality technology field, concretely relates to cabin is experienced to VR scene, include: the cabin body, hatch door, electronic access control system, human -computer interaction system, communications facilities, data processing equipment and VR system, the VR system includes that VR head shows, VR controller and VR host computer, data processing equipment follows electronic access control system, human -computer interaction system, communications facilities and/or VR host computer and acquires user's relevant information. The embodiment of the utility model provides an after the electronic access control system opens cabin is experienced to VR scene's hatch door, it is internal that the user can enter into cabin is experienced to VR scene's cabin, through with set up in the internal human -computer interaction system in cabin, select VR content interested, and use the VR head to show and watch the VR content, the VR host computer acquires and carries out the corresponding processing of operating instruction to the VR content after the user uses the VR controller operation instruction, realize that the user uses the interdynamic of the VR scene that VR controller and VR content correspond, user experience is lifted.

12. [109766004](#) A METHOD AND DEVICE FOR CONTROLLING AN OBJECT IN A VR SCENE AT INTERVALS

CN - 17.05.2019

Int.Class [G06F 3/01](#) Appl.No 201811646972.2 Applicant BEIJING NOITOM TECHNOLOGY LTD. Inventor DAI RUOLI

The embodiment of the invention relates to a method and device for controlling an object in a VR scene at intervals. The method comprises the steps of obtaining a first posture of an action capture glove; determining an alignment gesture of a virtual glove corresponding to the action capture glove in a VR scene based on the first gesture; determining an alignment line corresponding to the alignment gesture and a target virtual object aligned with the alignment line in a VR scene; and if the alignment gesture meets a preset grabbing condition, controlling the target virtual object to fly into the virtual glove along the alignment line. According to the embodiment of the invention, the object can be fetched from the air in the VR scene, so that the user can fetch the target virtual object in the VR scene without moving the position practically, and better VR experience is brought to the user.



13. [109711302](#) MODEL PARAMETER CALIBRATION METHOD AND DEVICE, COMPUTER EQUIPMENT AND STORAGE MEDIUM CN - 03.05.2019

Int.Class [G06K 9/00](#) Appl.No 201811550990.0 Applicant BEIJING NOITOM TECHNOLOGY LTD. Inventor MA HAO

The invention relates to a model parameter calibration method. The invention discloses a device, computer equipment and a storage medium. Historical data are obtained, wherein the historical data comprises historical positions and posture information of human skeletons, a historical image of the light spot and historical measurement data of the inertial sensor; obtaining current frame data comprising the current image and current measurement data of the inertial sensor; calculating the static estimation of the current model parameter according to the historical data and the credibility corresponding to the historical data; and historical data are updated according to static estimation of the model parameters, the credibility of the current frame data is calculated according to the historical data, dynamic compensation of the current model parameters is calculated according to the credibility of the current frame data and the updated historical data, and the calibration precision of the model parameters is improved.

14. [109770911](#) GAIT ANALYSIS METHOD, DEVICE AND STORAGE MEDIUM CN - 21.05.2019

Int.Class [A61B 5/11](#) Appl.No 201910055357.2 Applicant BEIJING NOITOM TECHNOLOGY LTD. Inventor JIANG BIN

The invention relates to a gait analysis method and device and a storage medium. The method comprises the following steps: acquiring motion data of an object to be detected in a preset period by using a motion capture device; determining a gait period of the object to be detected according to the motion data; extracting gait characteristic parameters of the object to be detected based on the gait period; and determining the motion type of the object to be detected according to the gait characteristic parameters, and executing gait analysis according to the gait characteristic parameters of the gait period with the motion type being a walking type. By means of the method, effective walking data can be extracted from all-day hybrid motion data to serve as a data base of gait analysis, gait periods are distinguished firstly, and then gait analysis can be achieved according to the gait characteristic parameters of gait periods of walking data to walking types.

15. [112790760](#) THREE-DIMENSIONAL MOTION ATTITUDE CAPTURING METHOD, DEVICE AND SYSTEM, AND PROCESSING EQUIPMENT CN - 14.05.2021

Int.Class [A61B 5/11](#) Appl.No 202110007721.5 Applicant BEIJING NOITOM TECHNOLOGY LTD. Inventor WANG KEWEI

The invention relates to a three-dimensional motion attitude capturing method, device and system, and processing equipment. The method is executed by the processing equipment, and the processing equipment is connected with sensors fixed on motion nodes of a moving object. The method comprises the following steps: when the moving object is in a specified posture, acquiring original motion data acquired by a plurality of sensors; converting the original motion data into node space data, wherein the node space data comprises the position and the rotation angle of the motion node; performing motion attitude analysis on the node space data to obtain attitude data, wherein the attitude data is used for representing a specified attitude of the moving object; and performing three-dimensional model rendering on the attitude data to obtain an attitude display result of the moving object. According to the invention, hardware cost can be reduced, application scenes can be expanded, and the accuracy of motion data can be improved.

16. [109683715](#) VR EQUIPMENT CONTROL METHOD AND DEVICE AND COMPUTER READABLE STORAGE MEDIUM CN - 26.04.2019

Int.Class [G06F 3/01](#) Appl.No 201811646953.X Applicant BEIJING NOITOM TECHNOLOGY LTD. Inventor HE YUANHUI

The invention relates to a VR equipment control method and device and a computer readable storage medium. The method comprises the following steps: detecting whether VR equipment establishes a data service connection channel with a server or not; When the VR equipment establishes a data service channel with a server, judging whether a control instruction is received through the data service connection channel or not; When the control instruction is received, judging whether the control instruction meets a preset execution condition or not; And when the control instruction satisfies a preset execution condition, controlling the VR equipment to execute an operation corresponding to the control instruction. According to the embodiment of the invention, the control instruction for the start-stop switch of the control software and content can be initiated from the server, the equipment can be managed from the server side, the application can be managed, new equipment can be expanded, the control instruction can be expanded, and the new control instruction can be configured.

17. [109766003](#) AN OBJECT DISPLAY METHOD AND DEVICE IN A VR SCENE CN - 17.05.2019

Int.Class [G06F 3/01](#) Appl.No 201811646952.5 Applicant BEIJING NOITOM TECHNOLOGY LTD. Inventor GUO CONG

The embodiment of the invention relates to an object display method and device in a VR scene. The method comprises the steps of displaying a superior object in the VR scene; detecting whether virtual interaction equipment corresponding to the VR interaction equipment in the VR scene is in contact with the superior object or not; and if the virtual interaction device is in contact with the superior object, displaying a middle-level object corresponding to the superior object. According to the embodiment of the invention, the middle-level object corresponding to the upper-level object can be displayed in the VR scene, the stereoscopic impression is stronger, and a user can conveniently check the middle-level object in the VR scene.

18. [213028297](#) ACTIVE FIELD SCANNING ROD, ACTIVE CALIBRATION RULER AND ACTIVE CALIBRATION SYSTEM CN - 20.04.2021

Int.Class [H04N 5/232](#) Appl.No 202120018050.8 Applicant BEIJING NOITOM TECHNOLOGY LTD. Inventor SONG FANGZHOU

The invention relates to the technical field of optical calibration, in particular to an active field sweeping rod, an active calibration ruler and an active calibration system. The LED lamp comprises a first shell, a first integrated circuit board and a first battery are arranged in the first shell, a first switch is arranged on the surface of the first shell, three first infrared LED lamp beads are further arranged on the surface of the first shell at intervals, and the first battery, the first infrared LED lamp beads and the first switch are all connected with the first integrated circuit board; the first battery is used for supplying power to the first infrared LED lamp bead and the first integrated circuit board; and the first switch is used for controlling the on-off of the first infrared LED lamp bead. The infrared light source is emitted by the first infrared LED lamp beads, and an optical camera is not needed for light supplement, namely, a reflective material existing in a site does not affect calibration operation. The embodiment of the invention changes the tracking mode of the traditional calibration tool, has strong anti-interference capability, greatly reduces the requirement for the interior of the tracking field, and is convenient for carrying out rapid calibration operation on the optical tracking field.

19. [113925611](#) MATCHING METHOD AND DEVICE OF OBJECT THREE-DIMENSIONAL MODEL AND OBJECT ENTITY, EQUIPMENT AND MEDIUM CN - 14.01.2022

Int.Class [A61B 34/20](#) Appl.No 202111539062.6 Applicant BEIJING NOITOM TECHNOLOGY LTD. Inventor ZHOU FENG



The invention relates to a matching method and device of an object three-dimensional model and an object entity, equipment and a medium. The method comprises the following steps: identifying first positions of at least three model reflection points based on the object three-dimensional model; tracking a second position of the at least three optical reflective points based on an optical camera device; and based on the first positions of the at least three model reflection points and the second positions of the at least three optical reflection points, matching the pose of the object three-dimensional model and the pose of the object entity. According to the invention, the first positions of the at least three model reflection points are identified through the object three-dimensional model, the second positions of the at least three optical reflection points are tracked through the optical camera device, and finally the object three-dimensional model is matched with the pose of the object entity, so that the teaching purpose can be realized, related personnel are helped to carry out space three-dimensional positioning judgment and operation better, the learning time is shortened, the medical safety is improved, and the medical burden is relieved.

20. [207937964](#) A GLOVES FOR MOTION CAPTURE

CN - 02.10.2018

Int.Class [G06F 3/01](#) Appl.No 201820465548.7 Applicant BEIJING NOITOM TECHNOLOGY LTD. Inventor DAI RUOLI

The utility model relates to a gloves for motion capture, these gloves include: wrist portion, palm portion and dactylothea portion still include: can dismantle the casing of being connected with thegloves body, all be provided with inertial sensor in the second dactylus of dactylothea portion department and the palm portion, the vibrator who is provided with the circuit board in the casing andis connected with the circuit board, all inertial sensor equally divide and bie are connected with the circuit board, housing face is provided with the mounting surface, and the mounting surface is provided with first fixed subassembly. The embodiment of the utility model provides a through the hand action who catches the user, the motion simulation of realization in virtual scene, and realize the true feedback to virtual scene through vibrator, thereby improving user experience, and it is convenient in order to realize to set up the mounting surface at the motion capture gloves, other specific optical localization equipment of adaptationto the certain degree, make the sensor be fixed in on hand more steadily, improve the data accuracy.

21. [108355357](#) ADAPTER OF FIXED HANDLE

CN - 03.08.2018

Int.Class [A63F 13/98](#) Appl.No 201810434282.4 Applicant BEIJING NOITOM TECHNOLOGY LTD. Inventor DAI RUOLI

The invention relates to an adapter of a fixed handle. The adapter comprises a body and a handle fixing clasp; a fixing and mounting part and a locating part which is misplaced with the fixing mounting part are arranged on the first side face of the body; one end of the handle fixing clasp is rotatably connected with the body, and the other end of the hand fixing clasp is clamped to the body; whenthe other end of the handle fixing clasp is fixedly clamped to the body, the body cooperates with the handle fixing clasp to clamp an optical handle to be fixed; the adapter further comprises an armfixing part connected with the body; the front side of the adapter can be fixed to rear connecting structures of hand motion capturing gloves through the fixing and mounting part and the locating part, the rear side of the adapter is bound to the front arm of a user through the arm fixing part, and the adapter is prevented from displacing relative to the arm when the user exercises. Through the cooperation of the handle fixing clasp and the body, the optical handle can be clamped, and the optical handle can be fixed relative to the adapter.

22. [208271131](#) MOTION CAPTURE MODULE AND HAND MOTION CAPTURE GLOVES

CN - 21.12.2018

Int.Class [G06F 3/01](#) Appl.No 201820683406.8 Applicant BEIJING NOITOM TECHNOLOGY LTD. Inventor DAI RUOLI

The utility model relates to a motion capture module and hand motion capture gloves, motion capture module include the casing, and the setting is in inertial sensor in the casing inner chamber, and run through the casing and with the external lead wire that the inertial sensor electricity is connected, the surface of casing is provided with to bond and faces the first magic subsides to the outside. Because it is higher that the subsides adhesive strength that pastes with the second magic is pasted to first magic, so the motion capture module does not drop can guarantee to use the time, the actuating signal of guaranteeing wherein inertial sensor formation comparatively accurately detects user's body movement.

23. [109663344](#) NAVIGATION MECHANISM

CN - 23.04.2019

Int.Class [A63F 13/213](#) Appl.No 201811628582.2 Applicant BEIJING NOITOM TECHNOLOGY LTD. Inventor JIANG BIN

The invention relates to the technical field of virtual reality, in particular to a navigation mechanism. The navigation mechanism comprises a body, a developing portion and at least three light reflection assemblies, and the body is arranged to be fixedly connected with an object to be navigated; the light reflection assemblies are in protrusion connection with the surface of the body and are arranged outside the object to be navigated, and the space layout of the light reflection assemblies is asymmetric and is used for determining the position and gesture of the object to be navigated in space; the developing portion is connected to the body and relatively fixed to the light reflection assemblies, and the developing portion is arranged to be subjected to integrated imaging with the object to be navigated under the set environment. By adopting the navigation structure, under the set condition, the navigation mechanism and the object to be navigated can form a clear image, and therefore the follow-up navigation working accuracy is ensured.

24. [212301848](#) POSITION MEASURING DEVICE

CN - 05.01.2021

Int.Class [G01S 5/06](#) Appl.No 202020571118.0 Applicant BEIJING NOITOM TECHNOLOGY LTD. Inventor WANG KAN

The utility model relates to the technical field of virtual reality, in particular to a position measuring device. The position measuring device comprises a reference part and at least three positionmeasuring mechanisms, and each position measuring mechanism is used for obtaining the spatial position of the reference part and the spatial position of the object to be measured relative to the position measuring mechanism so as to obtain the relative position relation between the object to be measured and the reference part. When the position measuring device is used for measuring the spatial position of an object to be measured, the accuracy of a measuring result is not influenced basically even if the position of the measuring mechanism is changed.

25. [109540192](#) TIME DELAY MEASURING METHOD AND DEVICE FOR MOTION CAPTURE SYSTEM AND STORAGE MEDIUM

CN - 29.03.2019

Int.Class [G01D 18/00](#) Appl.No 201811239000.1 Applicant BEIJING NOITOM TECHNOLOGY LTD. Inventor LIU WEIFU

The invention relates to a time delay measuring method and device for a motion capture system and a computer storage medium. A motion sensor of the motion capture system is fixed on a resettable inputdevice. The method comprises the steps that when the resettable input device moves, the input moment of receiving the input data generated by the resettable input device is acquired; a motion data response moment detected by the motion sensor is acquired when the motion sensor follows the resettable input device to move; and according to the input moment and the response moment, the time delay ofthe motion capture device is determined. The method subtly fixes the motion sensor on the resettable input device, and can easily and quickly measure the time delay of the motion capture device.



26. [109470263](#) MOTION CAPTURE METHOD, ELECTRONIC DEVICE AND COMPUTER STORAGE MEDIUM CN - 15.03.2019

Int.Class [G01C 23/00](#) Appl.No 201811158156.7 Applicant BEIJING NOITOM TECHNOLOGY LTD. Inventor LIU WEIFU

The embodiment of the invention relates to a motion capture method, an electronic device and a computer storage medium. The method comprises the following steps: acquiring the length of a first part of a body model of an object to be captured, wherein the first part is between the neck and the legs; acquiring motion information through a plurality of motion sensors which are arranged on the head, the buttocks and at least one body section of the first part; and determining the posture of each body section of the first part and the neck by interpolation processing based on the motion information. According to the method, the plurality of motion sensors are arranged on the head, the buttocks and at least one body section of the first part, and the interpolation processing is carried out, so that the postures of each body section of the first part and the neck can be accurately determined, and as a result, the motion capture accuracy can be improved.

27. [109814714](#) INSTALLATION POSTURE DETERMINATION METHOD AND DEVICE FOR MOTION SENSOR AND STORAGE MEDIUM CN - 28.05.2019

Int.Class [G06F 3/01](#) Appl.No 201910055365.7 Applicant BEIJING NOITOM TECHNOLOGY LTD. Inventor LIU WUDA

The invention relates to an installation posture determination method and device of a motion sensor and a storage medium. The motion sensor is worn on the limb of a tested object, and the method comprises the steps of obtaining the spatial posture of the motion sensor in a motion capture system of the tested object under at least two preset postures with the same orientation; determining the face orientation of the tested object according to the at least two preset postures; according to the face orientation and a preset model of the tested object, determining limb postures of the tested object under different preset postures; and determining the installation postures of the motion sensors relative to the installed limbs according to the spatial postures and the limb postures. When installation errors exist when the motion sensor is worn, the relative positions of the sensor and limbs can be finally determined through the method, and therefore when restoration is conducted through the motion data of the motion sensor, based on the determined installation postures, errors such as dislocation and deviation of the limbs in an image obtained through restoration can be avoided.

28. [108710432](#) DIAMAGNETIC METHOD AND POSTURE DETERMINATION METHOD OF MOTION CAPTURING EQUIPMENT AND DEVICES CN - 26.10.2018

Int.Class [G06F 3/01](#) Appl.No 201810432681.7 Applicant BEIJING NOITOM TECHNOLOGY LTD. Inventor DAI RUOLI

The embodiment of the invention relates to the technical field of virtual-reality [VR], and particularly to a diamagnetic method and a posture determination method of motion capturing equipment and devices. The diamagnetic method comprises: acquiring magnetic field information detected by a magnetic field detector installed in the motion capturing equipment; judging whether the magnetic field information meets a preset magnetic field condition; and reducing data confidence of a sensor, which is installed in the motion capturing equipment and impacted by a magnetic field, when the magnetic field information does not meet the preset magnetic field condition. According to the embodiment of the invention, the magnetic field information is detected, whether the magnetic field information meets the preset magnetic field condition is judged, and if not, it shows that the external magnetic field can impact the magnetic sensor, data of the magnetic sensor are caused to be inaccurate, thus the data confidence of the sensor impacted by the magnetic field is reduced, and impacts of external magnetic field interference are indirectly reduced.

29. [109655092](#) SENSOR CALIBRATION JIG CN - 19.04.2019

Int.Class [G01D 18/00](#) Appl.No 201811604768.4 Applicant BEIJING NOITOM TECHNOLOGY LTD. Inventor GAO LIFENG

The invention relates to the technical field of virtual reality, in particular to a sensor calibration jig. The sensor calibration jig comprises a base, the base comprises a main body, the main body is provided with multiple limiting holes which are sunken relative to the surface of the main body, and the limiting holes are used for being provided with to-be-calibrated sensors, so that the to-be-calibrated sensors are relatively fixed with the base. By means of the sensor calibration jig, the to-be-calibrated sensors can be calibrated simultaneously, and thus it is guaranteed that the calibrated sensors have the same measurement result for the same motion process.

30. [109782910](#) VR SCENE INTERACTION METHOD AND DEVICE CN - 21.05.2019

Int.Class [G06F 3/01](#) Appl.No 201811642097.0 Applicant BEIJING NOITOM TECHNOLOGY LTD. Inventor GUO CONG

The invention relates to a VR scene interaction method and device. The method comprises the steps of obtaining a user position where a user is located in a real scene collected by a position collection device; In a VR scene corresponding to the real scene, displaying a user position mark by taking the user position as a center; And if the user position in the real scene changes, controlling the user position mark in the VR scene to move along with the change of the user position. According to the embodiment of the invention, the position of the user in the VR scene can be determined according to the position of the user in the real scene; According to the technical scheme, the user position mark is displayed at the position where the user is located and can move along with movement of the user, the user can conveniently know the position where the user is located in the VR scene, the immersion feeling of the VR scene is improved, and the experience of interaction with the VR scene is improved.

31. [209513110](#) PLANE PRESSURE DETECTION DEVICE CN - 18.10.2019

Int.Class [G01L 1/22](#) Appl.No 201920101810.4 Applicant BEIJING NOITOM TECHNOLOGY LTD. Inventor LIU WUDA

The embodiment of the utility model relates to a plane pressure detection device. The plane pressure detection device comprises a first body and a second body. The first body and the second body are movably connected through a connecting part; the first body and the second body are each provided with a pressure sensor of a plate-shaped structure. The pressure sensor comprises a first circuit board layer, a second circuit board layer, a first conductive strip group, a pressure sensing conductive material layer and a second conductive strip group, a first conductive strip group is arranged on the first circuit board layer, and a second conductive strip group is arranged on the second circuit board layer; the first conductive strip group is in contact with the first surface of the pressure sensing conductive material layer, and the second conductive strip group is in contact with the second surface of the pressure sensing conductive material layer; each of the first conductive strip group and the second conductive strip group comprises a plurality of conductive strips which are isolated from each other; and projections of the conductive strips in the first conductive strip group and the conductive strips in the second conductive strip group on the pressure sensing conductive material layer are crossed.

32. [207571698](#) A STAGE PROPERTY FOR VIRTUAL REALITY SCENE CN - 03.07.2018

Int.Class [G06F 3/01](#) Appl.No 201820383385.8 Applicant BEIJING NOITOM TECHNOLOGY LTD. Inventor DAI RUOLI

The embodiment of the utility model provides a stage property for virtual reality scene is related to, the stage property includes: stage property body and spatial distribution's at least three reflecting component, at least three reflecting component's spatial layout is asymmetric, and at least three reflecting component's spatial layout is arranged in only discernment stage property and position and the gesture of only definite stage property in the space, at least

three reflecting component installs on the stage property body, and it is outstanding the surface of stage property body. The embodiment of the utility model provides an at least three reflecting component through the distribution of installation space on the stage property body, dynamic natural frequency among the virtual reality scene can gather reflecting component's reverberation, and then make the virtual reality computer to divide different stage property and stage property position according to the reflection lightzone that dynamic natural frequency gathered, use different stage properties as different users, the virtual reality computer the basis of the different stage properties of discernment go up can satisfy in same simulated environment that a plurality of users experience simultaneously and each other alternately.

33. [108809339](#) COMMUNICATION CONTROL METHOD OF MOTION CAPTURING GLOVES AND TRANSCIEVER CN - 13.11.2018

Int.Class [H04B 1/10](#) Appl.No 201810434228.X Applicant BEIJING NOITOM TECHNOLOGY LTD. Inventor DAI RUOLI

The embodiment of the invention belongs to the technical field of the virtual-reality, and specifically relates to a communication control method of motion capturing gloves and a transceiver. The method comprises the following steps: communicating with the motion capturing gloves in the preset communication frequency; acquiring a data packet sent by the motion capturing gloves; determining whether the co-frequency interference is existent in the communication with the motion capturing gloves according to the communication frequency and the amount of the acquired data packet; if the co-frequency interference is existent, adjusting the communication band communicated with the motion capturing gloves. Through the communication control method disclosed by the embodiment of the invention, whether the co-frequency interference is existent in the communication with the motion capturing gloves can be determined according to the amount of the acquired data packet and the preset communication frequency after being communicated with the motion capturing gloves; if the co-frequency interference is existent, the communication band is adjusted, and the co-frequency interference can be overcome.

34. [109738096](#) PLANAR PRESSURE DETECTING DEVICE CN - 10.05.2019

Int.Class [G01L 1/18](#) Appl.No 201910057255.4 Applicant BEIJING NOITOM TECHNOLOGY LTD. Inventor LIU WUDA

An embodiment of the invention relates to a planar pressure detecting device, comprising: a first body and a second body, wherein the first body and the second body are movably connected by a connecting portion; the first body and the second body are both provided with plate-type pressure sensors that comprises: a first circuit board layer, a second circuit board layer, a first conductive strip group, a pressure-sensitive conductive material layer and a second conductive strip group; the first circuit board layer is provided with the first conductive strip group, the second circuit board layer is provided with the second conductive strip group; the first conductive strip group is in contact with the first surface of the pressure-sensitive conductive material layer, and the second conductive strip group is in contact with the second surface of the pressure-sensitive conductive material layer; the first conductive strip group and the second conductive strip group respectively comprise a plurality of mutually isolated conductive strips; and the projections of the conductive strips in the first conductive strip group and that of the conductive strips in the second conductive strip group cross on the pressure-sensitive conductive material layer.

35. [109766005](#) A METHOD AND DEVICE FOR TAKING AND PLACING OBJECTS IN A VR SCENE CN - 17.05.2019

Int.Class [G06F 3/01](#) Appl.No 201811646998.7 Applicant BEIJING NOITOM TECHNOLOGY LTD. Inventor DAI RUOLI

The embodiment of the invention relates to a method and device for taking and placing an object in a VR scene. The method comprises the steps of judging whether a virtual operation body corresponding to an action capture glove in the VR scene makes contact with the virtual object in the VR scene or not; if the virtual operation body is in contact with the virtual object, detecting the contact position of the virtual operation body and the virtual object; based on the shape of the virtual object and the contact position, judging whether the contact between the virtual operation body and the virtual object meets a preset relative fixed condition or not; and if yes, controlling the virtual object to move along with the virtual operation body, and when the contact does not meet the relative fixed condition, controlling the virtual object to be separated from the virtual operation body. According to the embodiment of the invention, the interaction between the virtual objects in the VR scene can be taken and placed by utilizing the virtual operation body corresponding to the action capture glove, the immersion feeling of a user is enhanced, and the reality degree of VR scene interaction is improved.

36. [109782909](#) INTERACTION METHOD AND DEVICE FOR VR INTERACTION EQUIPMENT AND VR SCENE CN - 21.05.2019

Int.Class [G06F 3/01](#) Appl.No 201811641993.5 Applicant BEIJING NOITOM TECHNOLOGY LTD. Inventor DAI RUOLI

The invention relates to an interaction method and device for VR interaction equipment and a VR scene. The method comprises the steps of obtaining reality scene information corresponding to a real scene in a preset project; According to the real scene information, judging whether a real object prop with the collision probability with the VR interaction equipment exceeding a preset collision threshold exists in the real scene or not; And if the real scene has the physical prop, in a VR scene corresponding to the real scene, a non-dominant collision area is generated at the front end of a virtual operation body corresponding to the VR interaction equipment, and the non-dominant collision area is used for being in contact with a virtual object in the VR scene. According to the embodiment of the invention, by setting the non-dominant collision area at the front end of the virtual operation body in the VR scene, the probability of collision between the VR interaction equipment and the physical prop is reduced, and the VR interaction equipment is effectively prevented from being damaged.

37. [209662602](#) NAVIGATION MECHANISM CN - 22.11.2019

Int.Class [A63F 13/213](#) Appl.No 201822245427.4 Applicant BEIJING NOITOM TECHNOLOGY LTD. Inventor JIANG BIN

The utility model relates to the technical field of virtual reality, in particular to a navigation mechanism. The navigation mechanism comprises a body, an action sensor and at least three light reflecting assemblies, wherein the body is fixedly connected with an object to be navigated; the at least three light reflecting assemblies are connected to the surface of the body in a protruding mode, and the spatial layout of the at least three light reflecting assemblies is asymmetric. The action sensor is mounted in the body; wherein the spatial layout of the at least three reflective assemblies and the action sensor are used for determining the position and posture of the to-be-navigated object in space. The navigation precision provided by the navigation mechanism provided by the utility model is relatively high.

38. [209916004](#) OPTICAL AND INERTIAL HYBRID MOTION CAPTURE SYSTEM CN - 10.01.2020

Int.Class [A61B 5/11](#) Appl.No 201821840386.7 Applicant BEIJING NOITOM TECHNOLOGY LTD. Inventor LIU WEIFU

The utility model relates to an optical and inertial hybrid motion capture system. The system comprises an inertia data receiver, a plurality of motion capture cameras, a plurality of optical inertial hybrid acquisition modules and a plurality of inertial acquisition modules, wherein each optical inertia hybrid acquisition module comprises an inertia acquisition module and at least one optical mark point, the optical mark point is fixed with the inertia acquisition module, and the inertia acquisition module comprises an inertia sensor and an inertia data transmitter; wherein each inertia acquisition module comprises an inertia sensor and an inertia data transmitter; the inertia data receiver receives inertia data sent by the inertia data emitter in a wireless mode, and each motion capture camera detects optical data of an optical mark point in each optical inertia mixed collection module. And each optical inertia hybrid acquisition module can acquire inertia data and optical data of the same part at the same time, so that the problem of relatively low accuracy caused by single inertia data or optical data is avoided.

39. 108196688 HANDHELD DEVICE

CN - 22.06.2018

Int.Class G06F 3/01 Appl.No 201810230748.9 Applicant BEIJING NOITOM TECHNOLOGY LTD. Inventor DAI RUOLI

The embodiment of the invention relates to the technical field of virtual reality, particularly to a handheld device. The handheld device comprises a rigid body, a VR (virtual reality) controller and a handle. The shell of the handle is provided with a rigid body mounting structure for mounting the rigid body, and the rigid body can be identified by a VR computer. A user can operate the VR controller through a first window set in the surface of the shell of the handle, and the VR computer processes a VR scene after acquiring operating signals to achieve interaction between the user and the VR scene. Due to the fact that the handle is provided with the rigid body, through identification of the rigid body and on the basis of the correspondence between the rigid body and the VR controller, the VR computer can determine which VR controller transmits the operating signals. In the same VR scene, different users can hold different handles which are provided with rigid bodies and VR controllers to achieve simultaneous experience and interaction among each other.

40. 209280174 PLANE SENSOR AND PLANE PRESSURE DETECTION DEVICE

CN - 20.08.2019

Int.Class G01L 1/00 Appl.No 201822182322.9 Applicant BEIJING NOITOM TECHNOLOGY LTD. Inventor JIANG NAN

The embodiment of the utility model relates to a plane sensor and a plane pressure detection device, and the plane sensor comprises a first conductive strip group, a pressure sensing conductive material layer, and a second conductive strip group. Wherein the first conductive strip group is in contact with the first surface of the pressure sensing conductive material layer, and the second conductive strip group is in contact with the second surface of the pressure sensing conductive material layer; each of the first conductive strip group and the second conductive strip group comprises a plurality of conductive strips which are isolated from each other; and projections of the conductive strips in the first conductive strip group and the conductive strips in the second conductive strip group on the pressure sensing conductive material layer are crossed. Compared with an existing pressure plate formed by splicing a plurality of pressure sensors, the plane sensor is of a three-layer structure, the structure is simplified, a complex circuit for obtaining data of the pressure sensors is not needed, the manufacturing cost is lower, and the process is simpler.

41. 107883979 METHOD AND SYSTEM FOR UNIFYING INERTIAL SENSOR COORDINATE SYSTEM AND REFERENCE COORDINATE SYSTEM

CN - 06.04.2018

Int.Class G01C 25/00 Appl.No 201610873386.6 Applicant BEIJING NOITOM TECHNOLOGY LTD. Inventor HAN YONGGEN

The invention provides a method and a system for unifying an inertial sensor coordinate system and a reference coordinate system. The method comprises the following steps: acquiring a first group of projections of acceleration on coordinate axes of first coordinate systems in the inertial sensor coordinate system and the reference coordinate system; acquiring a second group of projections of the acceleration on coordinate axes of second coordinate systems in the inertial sensor coordinate system and the reference coordinate system; estimating error angles between the coordinate axes of the inertial sensor coordinate system and the reference coordinate system according to the first and second groups of projections; and unifying the inertial sensor coordinate system and the reference coordinate system by means of the estimated error angles.

42. 109710075 A METHOD AND DEVICE FOR DISPLAYING CONTENT IN A VR SCENE

CN - 03.05.2019

Int.Class G06F 3/01 Appl.No 201811641965.3 Applicant BEIJING NOITOM TECHNOLOGY LTD. Inventor GUO CONG

The embodiment of the invention relates to a method and device for displaying content in a VR scene. The method comprises the steps that detecting whether to-be-displayed content exists or not; if the to-be-displayed content exists, obtaining the to-be-displayed content; determining a first virtual object used for displaying the to-be-displayed content in the VR scene; and displaying the to-be-displayed content on the first virtual object. According to the embodiment of the invention, the to-be-displayed content can be displayed on the first virtual object of the VR scene, data content visualization is realized, and a user can conveniently obtain the required data content in the VR scene.

43. 112797954 SWING POSTURE CORRECTION METHOD AND DEVICE BASED ON INERTIA MOTION CAPTURE, EQUIPMENT AND MEDIUM

CN - 14.05.2021

Int.Class G01C 9/00 Appl.No 202110009052.5 Applicant BEIJING NOITOM TECHNOLOGY LTD. Inventor WANG JIAN

The embodiment of the invention relates to a swing posture correction method and device based on inertia motion capture, equipment and a medium. The swing posture correction method based on inertia motion capture comprises the steps that in the process that a player swings a baseball bat, motion data of the baseball bat are collected through an inertia sensor installed on the baseball bat; real-time attitude data of a key point is determined based on the motion data of the ball bat, wherein the key points comprise at least one of a bat rising point, a bat swing highest point, a ball hitting point and a bat swing ending point, and correcting the swing posture of the player based on the real-time posture data. By adopting the technical scheme, the motion data of the baseball bat is captured through the inertia motion capture technology, the attitude data of the baseball bat at the key points are determined, and whether the swing attitude of a player is correct or not is determined by analyzing the attitude data of the key points, so that the accuracy of judging the swing posture is improved.

44. 208481999 VIRTUAL REALITY EXPERIENCE SYSTEM

CN - 12.02.2019

Int.Class A63G 31/02 Appl.No 201820724013.7 Applicant BEIJING NOITOM TECHNOLOGY LTD. Inventor DAI RUOLI

An embodiment of the utility model discloses a virtual reality experience system, include: at least one portable cabin body and, set up show at internal motion capture camera, the VR head in portable cabin, data acquisition facility and data processing equipment, still be provided with the head during the VR head shows and show attitude sensor. Position and the gesture of the portable cabin body at the removal in-process that data acquisition facility gathered the portable cabin body are passed through to this scheme, and it shows in the internal apparent position of head in cabin to track seizure VR head through the motion capture camera, and the apparent attitude sensor detection VR head of head in showing through the VR head shows in the internal apparent gesture of head in cabin, and then the VR content in showing the VR head through data processing equipment combines together with portable cabin gesture physically, the apparent user's of messenger VR head the health perception and the visual sensation of VR content are synchronous, this virtual reality experience system can be applied to in the outdoor or indoor true place that the VR examination of at least one portable cabin body is taken advantage of and/or the VR examination is driven.

45. 109766002 AN INTERACTION METHOD AND DEVICE FOR VR INTERACTION EQUIPMENT AND A VR SCENE

CN - 17.05.2019

Int.Class G06F 3/01 Appl.No 201811642129.7 Applicant BEIJING NOITOM TECHNOLOGY LTD. Inventor DAI RUOLI

The embodiment of the invention relates to an interaction method and device for VR interaction equipment and a VR scene. The method comprises the steps of obtaining a virtual object generation signal sent by the VR interaction equipment; acquiring a preset virtual object corresponding to the virtual object



generation signal; generating the virtual object at a preset initial position in the VR scene, wherein the initial position is a preset initial position of the VR interaction device on a corresponding virtual interaction device in a VR scene. According to the embodiment of the invention, the virtual object can be determined based on the virtual object generation signal sent by the VR interaction equipment in the real scene, and the virtual object is displayed at the preset initial position on the virtual interaction equipment in the VR scene, so that the virtual object is generated in the VR scene based on the entity behavior in the real scene.

46. [112362087](#) NOVEL INDUSTRIAL MEASUREMENT STRUCTURE AND NOVEL INDUSTRIAL MEASUREMENT SYSTEM CN - 12.02.2021

Int.Class [G01C 25/00](#) Appl.No 202110039417.9 Applicant BEIJING NOITOM TECHNOLOGY LTD. Inventor GUO JUNYI

The invention relates to the technical field of motion capture, in particular to a novel industrial measurement structure and a novel industrial measurement system. The system comprises an inertial sensor and a base, a groove is formed in the top end of the base, the inertial sensor is detachably arranged in the groove, the base comprises a bottom face and four side faces, any two adjacent side faces are perpendicular to each other, each side face is perpendicular to the bottom face, and the inertial sensor comprises a calibration end located at the top end of the inertial sensor; and the calibration end extends out of the groove and is parallel to the bottom surface. According to the scheme, the base and the inertial sensor are arranged, the base is provided with the five positive axis surfaces, the inertial sensor is provided with the positive axis surface, rapid and accurate calibration of the inertial sensor can be achieved through six-surface combination, no other auxiliary calibration equipment is needed in the calibration process before and after delivery, and the whole process is convenient and rapid. through the combination of the base and the inertial sensor, rapid installation with an object to be tested can be realized, so that the purpose of rapid experiment is realized.

47. [214231331](#) SCOLIOSIS MEASURING INSTRUMENT AND SCOLIOSIS MEASURING SYSTEM CN - 21.09.2021

Int.Class [A61B 5/107](#) Appl.No 202121151380.0 Applicant BEIJING NOITOM TECHNOLOGY LTD. Inventor LI TILEI

The utility model relates to the field of measuring equipment, and particularly provides a scoliosis measuring instrument and a scoliosis measuring system. The scoliosis measuring instrument comprises a measuring instrument body and a node sensor, the measuring surface of the measuring instrument body is a plane, and a groove is formed in the measuring surface; the node sensor is arranged on the measuring instrument body and is used for measuring the inclination angle of the measuring surface relative to the reference surface. The scoliosis measuring system comprises a signal generator, a signal receiver, a node signal receiver and the scoliosis measuring instrument. When the device is used, the reference surface is firstly set, then the measuring surface is attached to the back of the human body, the groove is made to be opposite to the spine of the human body, then the inclination degree of the two sides of the spine of the human body is measured through the node sensors, use is more convenient, and the application scene is wider; the problems of harsh equipment use requirements, inaccurate measurement results, tedious early-stage debugging work and the like are avoided, the high-quality application requirement is met, and the advantage of low manufacturing cost is achieved.

48. [207637111](#) BEAR HANDLE OF RIGID BODY CN - 20.07.2018

Int.Class [G06F 3/0338](#) Appl.No 201820380931.2 Applicant BEIJING NOITOM TECHNOLOGY LTD. Inventor DAI RUOLI

The embodiment of the utility model provides a relate to the virtual reality technology field, concretely relates to bear handle of rigid body. Through setting up rigid body mounting structure on handle casing, the mountable rigid body, the rigid body can be discerned by the VR computer. Behind the inside installation space joint VR controller of handle casing, the the first window that user's accessible handle casing surface set up controls the VR controller. VR computer obtain handles the VR scene after controlling the signal, realizes the mutual of user and VR scene. Owing to install the rigid body on the handle, the VR computer is through the discernment to the rigid body to based on the corresponding relation of rigid body and VR controller and then can to confirm to control the signal be from which the VR controller sends. In same VR scene, different users can hold different handles, handle installation rigid body and VR controller, can satisfy that a plurality of users experience simultaneously and each other alternately.

49. [108415575](#) MOTION CAPTURE GLOVE WITH EMBEDDED SENSOR CN - 17.08.2018

Int.Class [G06F 3/01](#) Appl.No 201810433764.8 Applicant BEIJING NOITOM TECHNOLOGY LTD. Inventor DAI RUOLI

The invention relates to a motion capture glove with an embedded sensor. The glove comprises a palm part and at least one finger sleeve part, each finger sleeve part is connected with the palm part, and the internal space of each finger sleeve part is communicated with the internal space of the palm part; the glove further comprises a mounting layer, the mounting layer is arranged on the surfaces of the finger sleeve part and the palm part, and a mounting space is formed in the surfaces of the finger sleeve part and the palm part; the shape of the mounting layer is matched with the shape combined by the palm part and the at least one finger sleeve part. According to the glove, through arrangement of the mounting layer on the surface of the glove, a mounting layer is formed between the mounting layer and the glove, the sensor is installed through the mounting layer to prevent the sensor from being exposed to the outer surface of the glove, the mechanical damage of the sensor is reduced, and the problem that the sensor falls off and is lost during use is avoided.

50. [109785433](#) THREE-DIMENSIONAL MODEL GENERATION METHOD AND SYSTEM AND COMPUTER READABLE STORAGE MEDIUM CN - 21.05.2019

Int.Class [G06T 17/05](#) Appl.No 201811649935.7 Applicant BEIJING NOITOM TECHNOLOGY LTD. Inventor LI TILEI

The invention relates to a three-dimensional model generation method and system and a computer readable storage medium. The method comprises the following steps of obtaining a to-be-processed data file; preprocessing the to-be-processed data file to obtain a target data structure; generating a grid model by using the target data structure; and performing color filling on the grid model to generate the three-dimensional model. According to the embodiment of the invention, the three-dimensional model can be rapidly generated by using the data in the to-be-processed data file, the three-dimensional model can visually display the to-be-processed data, the loading time of data processing is shortened, the data processing rate is improved, the system stability when the data processing amount is large is ensured, and the system loading collapse problem is effectively avoided.

51. [109799907](#) MOTION CAPTURE GLOVE CALIBRATION METHOD AND DEVICE AND COMPUTER READABLE STORAGE MEDIUM CN - 24.05.2019

Int.Class [G06F 3/01](#) Appl.No 201811647023.6 Applicant BEIJING NOITOM TECHNOLOGY LTD. Inventor HE YUANHUI

The invention relates to an action capture glove calibration method and device and a computer readable storage medium. The method comprises the steps that at least one action capture sensor is fixed in an action capture glove; acquiring sensing data of the action capture sensor under a preset action; generating motion parameters of the motion capture sensor according to the sensing data; judging whether the motion parameters of the motion capture sensor meet a preset binding condition or not; and when the motion parameters of the motion capture sensor meet a preset binding condition, determining a corresponding binding relationship between the motion capture sensor and the motion capture glove. The invention provides a method. at least one action capture sensor is fixed in the action capture glove; data of the action capture sensor is sent under the preset action are acquired, motion parameters of the

action capture sensor are generated according to the sensing data, and whether a corresponding binding relation exists between the action capture glove and the action capture sensor or not can be accurately acquired according to the motion parameters.

52. [209500751](#) ADAPTER FOR FIXING HANDLE

CN - 18.10.2019

Int.Class [A63F 13/98](#) Appl.No 201822275948.4 Applicant BEIJING NOITOM TECHNOLOGY LTD. Inventor ZHOU FENG

The utility model relates to an adapter for fixing a handle. The adapter comprises a body, a first fixed mounting groove is formed in the upper end surface of the body; a handle fixing plate is further arranged on the upper end face of the body, one end of the handle fixing plate is rotationally connected with the body, and the other end of the handle fixing plate is clamped with the body; the fixed mounting plate is matched with the first fixed mounting groove to form a handle fixing hole; a base fixing part is arranged at the lower end of the body. According to the embodiment of the utility model, the first fixed mounting groove in the body is matched with the handle fixing plate, so that the optical handle can be clamped; the fixation of the optical handle relative to the adapter can be realized; rigid connection between the optical handle and the wrist shell of the glove is realized; the handle can be guaranteed to be located at a specific position when the handle is installed, position errors of the handle and a wrist shell of the glove do not need to be corrected many times, the optical handle can also serve as a position sensor for determining the hand position of a user, reuse of the functions is achieved, and the user does not need to additionally purchase a special position sensor.

53. [108268129](#) METHOD AND DEVICE FOR CALIBRATING MULTIPLE SENSORS ON A PAIR OF MOTION CAPTURE GLOVES, AND A PAIR OF MOTION CAPTURE GLOVES

CN - 10.07.2018

Int.Class [G06F 3/01](#) Appl.No 201710003195.9 Applicant BEIJING NOITOM TECHNOLOGY LTD. Inventor DAI RUOLI

The invention discloses a method and a device for calibrating multiple sensors on a pair of motion capture gloves, and the pair of motion capture gloves. The multiple sensors comprise an optical tracker and a first inertia measurement unit. The method comprises the following steps that: independently collecting the position information of the optical tracker under an optical coordinate system and the gesture information of the first inertia measurement unit under an inertia coordinate system under a plurality of motions of the motion capture gloves; and according to the position information of the optical tracker under the optical coordinate system and the gesture information of the first inertia measurement unit under the inertia coordinate system under the plurality of motions, calibrating the optical tracker and the first inertia measurement unit.

54. [113865622](#) PRECISION DETECTION METHOD AND DEVICE OF OPTICAL POSITIONING SYSTEM, EQUIPMENT AND MEDIUM

CN - 31.12.2021

Int.Class [G01C 25/00](#) Appl.No 202111477174.3 Applicant BEIJING NOITOM TECHNOLOGY LTD. Inventor ZHOU FENG

The invention relates to a precision detection method and device of an optical positioning system, equipment and a medium. By adjusting the position of slidable equipment, the shape and size of a mark point array flat plate and the arrangement mode of mark points on the mark point array flat plate, the precision of an optical positioning system can be detected without being limited by space, the precision of the optical positioning system can be detected only through an upper computer and the slidable equipment, the flexibility of the detection method is improved, and meanwhile a good precision detection effect is achieved with low cost.

55. [108734508](#) VR SCENE EXPERIENCE CABIN DATA PROCESSING METHOD AND DEVICE

CN - 02.11.2018

Int.Class [G06Q 30/02](#) Appl.No 201810329803.X Applicant BEIJING NOITOM TECHNOLOGY LTD. Inventor DAI RUOLI

The embodiment of the invention relates to a VR scene experience cabin data processing method and device. The method comprises the following steps: acquiring current user experience information sent by VR scene experience cabins released at different locations; generating user statistical information corresponding to different product classes based on the location information of each VR scene experience cabin, the current user experience information and the historic user experience data; respectively sending the user statistical information corresponding to different product classes to the corresponding product supplier. Visibly, the product class experienced by the user can be determined by acquiring the current user experience information sent by the VR scene experience cabin released at different locations, and then the user statistical information corresponding to different product classes can be generated based on the location information of the scene experience cabin, the current user experience information and the historic user experience data, and the user statistical information is sent to the corresponding product supplier, the product supplier can conveniently perform the customer relation management and screen the client, thereby reducing the communication cost with the client.

56. [108196687](#) VIRTUAL REALITY SCENE TOOL

CN - 22.06.2018

Int.Class [G06F 3/01](#) Appl.No 201810230140.6 Applicant BEIJING NOITOM TECHNOLOGY LTD. Inventor DAI RUOLI

The embodiment of the invention relates to a virtual reality scene tool. The virtual reality scene tool comprises a tool body and at least three reflecting modules spatially distributed in an asymmetric mode, and the spatial distribution of the at least three reflecting modules is used for uniquely identifying the tool and determining the position and posture of the tool in space; the at least three reflecting modules are mounted on the tool body and protruded out of the tool body. According to the virtual reality scene tool, the at least three reflecting modules which are spatially distributed are mounted on the tool body, a motion capture device in a virtual reality scene can collect light reflected by the reflecting modules and further a virtual reality computer can distinguish different tools and the positions of the tools according to the reflected light collected by the motion capture device; when different users use different tools, the virtual reality computer can achieve simultaneous experiencing and interaction of the users in one simulated environment on the basis of identifying the different tools.

57. [108152961](#) HOLDING TYPE HEAD-MOUNTED DISPLAY INSTALLATION FRAME

CN - 12.06.2018

Int.Class [G02B 27/01](#) Appl.No 201810047563.4 Applicant BEIJING NOITOM TECHNOLOGY LTD. Inventor GUO CONG

The embodiment of the invention relates to a holding type head-mounted display installation frame. According to the holding type head-mounted display installation frame, a head-mounted display can be positioned to the area of eyes of a user through a holding manner. Compared with a manner in which a display is fixed to the area of the eyes of the user through a head-fastening manner in the prior art, wearing difficulty can be reduced, and comfort degree is improved.

58. [108227957](#) HANDLE FOR BEARING RIGID BODY

CN - 29.06.2018

Int.Class [G06F 3/0338](#) Appl.No 201810230735.1 Applicant BEIJING NOITOM TECHNOLOGY LTD. Inventor DAI RUOLI



The embodiment of the invention relates to the technical field of virtual reality and particularly relates to a handle for bearing a rigid body. A rigid body mounting structure is arranged on a handleshell and can be used for mounting the rigid body, and the rigid body can be recognized by a VR computer. When a VR controller is clamped in a mounting space in the handle shell, a user can control the VR controller by virtue of first window arranged on the surface of the handle shell. After a control signal is acquired by the VR computer, a VR scene is processed, so that the interaction between the user and the VR scene is realized. The rigid body is mounted on the handle, so that the VR computer can further determine the VR controller which emits the control signal through the recognition of the rigid body based on the corresponding relation between the rigid body and the VR controller. Different users can handhold different handles in the same VR scene, and the handles are provided with the rigid bodies and the VR controllers, so that the simultaneous experience of multiple users and the interaction among the users can be realized.

59. [109568918](#) METHOD FOR CORRECTING SPORTS POSTURE OF USER UNDER ASSISTANCE OF SENSOR AND TERMINAL EQUIPMENT CN - 05.04.2019

Int.Class [A63B 71/06](#) Appl.No 201811588299.1 Applicant BEIJING NOITOM TECHNOLOGY LTD. Inventor LIU WUDA

An embodiment of the invention relates to a method for correcting sports posture of a user under assistance of a sensor and terminal equipment. The method comprises the steps as follows: the terminalequipment receives first data information sent by a data acquisition module, wherein the first data information is the actual sports posture, acquired by the data acquisition module, of the user; the first data information is compared with target data information corresponding to a preset standard sports posture; whether the actual sports posture is standard or not is judged according to a comparison result; feedback information is sent to the user according to a judgment result. The user can directly understand whether the actual sports posture conforms to the standard or not and adjust the actual sports posture correspondingly according to the feedback information, the sports posture of the user can be more standard through repeated adjustment and training, and user experience is enhanced.

60. [109767499](#) MULTI-USER IMMERSIVE INTERACTION METHOD AND SYSTEM BASED ON MR EQUIPMENT AND STORAGE MEDIUM CN - 17.05.2019

Int.Class [G06T 19/00](#) Appl.No 201811642079.2 Applicant BEIJING NOITOM TECHNOLOGY LTD. Inventor ZHOU FENG

The invention relates to a multi-user immersive interaction method and system based on MR equipment and a storage medium. The interaction method comprises the steps of building a global map model; obtaining first pose information of each MR device in the corresponding local map model; selecting a reference calibration point in the global map model; obtaining second pose information of each local map model relative to the reference calibration point; and synchronizing each MR device into the global map model according to the first pose information and the second pose information to obtain a global map. According to the embodiment of the invention, by constructing the global map model; obtaining the first pose information of each MR device in the corresponding local map model and the second pose information of each local map model relative to a reference calibration point in the global map model, synchronizing the MR devices into the global map model according to the first pose information and the second pose information to generate a global map, the interaction and the sharing of the head-mounted display data in the same map are realized, and each MR device can more completely display details in the map.

61. [210159202](#) NAVIGATION MECHANISM CN - 20.03.2020

Int.Class [A63F 13/213](#) Appl.No 201822245406.2 Applicant BEIJING NOITOM TECHNOLOGY LTD. Inventor JIANG BIN

The utility model relates to the technical field of virtual reality, in particular to a navigation mechanism. The navigation mechanism comprises a body, a developing part and at least three light reflecting assemblies, wherein the body is fixedly connected with an object to be navigated; the at least three light reflecting assemblies are connected to the surface of the body in a protruding mode and arranged outside an object to be navigated, and the spatial layout of the at least three light reflecting assemblies is asymmetric so as to determine the position and posture of the object to be navigated in space; and the developing part is connected to the body, is relatively fixed with the light reflecting assembly, and is arranged to be integrally imaged with an object to be navigated in a set environment. By adopting the navigation structure provided by the utility model, a clear image can be simultaneously formed by the navigation structure and an object to be navigated under a set condition, so that the accuracy of subsequent navigation work is ensured.

62. [209673111](#) POSITION AND POSTURE NAVIGATOR CN - 22.11.2019

Int.Class [G01C 21/16](#) Appl.No 201822245564.8 Applicant BEIJING NOITOM TECHNOLOGY LTD. Inventor JIANG BIN

The utility model relates to the technical field of virtual reality, in particular to a position and posture navigator. The position and posture navigator comprises a connecting mechanism and a navigation mechanism, wherein the connecting mechanism is arranged to be fixed relative to an object to be navigated; the navigation mechanism comprises a body and at least three light reflecting assemblies. Wherein the body is fixedly connected to the connecting mechanism, the at least three light reflecting assemblies are connected to the surface of the body in a protruding mode and arranged outside an object to be navigated, and the spatial layout of the at least three light reflecting assemblies is asymmetric so as to be used for determining the position and posture of the object to be navigated in space. By adopting the position and posture navigator provided by the utility model, the posture and action of the to-be-navigated object can be simply and conveniently obtained, so as to facilitate the subsequent operation of the to-be-navigated object.

63. [112803536](#) SPLICING TYPE INERTIAL SENSOR CHARGING BOX CN - 14.05.2021

Int.Class [H02J 7/00](#) Appl.No 202110048323.8 Applicant BEIJING NOITOM TECHNOLOGY LTD. Inventor SUN RUICHENG

The invention relates to the technical field of inertial sensors, and especially relates to a splicable inertial sensor charging box. The charging box comprises a main box body and at least one auxiliary box body, the side wall of one side of the main box body is provided with a first main connecting piece and a first main power supply interface, the auxiliary box body is provided with a first auxiliary connecting piece, a first auxiliary power supply interface, a second auxiliary connecting piece and a second auxiliary power supply interface, and the main box body and the auxiliary box body are each provided with a plurality of containing grooves used for containing inertial sensors. A charging connector is arranged at the bottom of each containing groove, and a first power interface is further formed in the main box body. According to the charging box, the main box body and the auxiliary box body which can be assembled are arranged, electrical connection between the main box body and the auxiliary box body is achieved, and the inertial sensors of the corresponding number and the charging box can form a whole, so the requirements of different application scenes can be met, other electrical arrangements do not need to be arranged, the charging process of the inertial sensors is more convenient and faster, and better use experience can be brought to a user.

64. [112729346](#) STATE PROMPTING METHOD AND DEVICE FOR INERTIAL MOTION CAPTURE SENSOR CN - 30.04.2021

Int.Class [G01C 25/00](#) Appl.No 202110009054.4 Applicant BEIJING NOITOM TECHNOLOGY LTD. Inventor GAO LUEHAN

The invention provides a state prompting method and device for an inertial motion capture sensor. The method comprises the steps: generating a state indication signal according to the state of an inertial motion capture sensor; obtaining a corresponding lamp language instruction according to the state indication signal; and controlling a state indicating lamp to flash by adopting the lamp language instruction so as to display the state of the inertial motion capture sensor through the flash characteristic of the state indicating lamp. By the adoption of the state prompting method and device for the inertial



motion capture sensor, motion capture personnel can determine the state of the inertial motion capture sensor only by observing the flashing state of the state indicating lamp; because the state indicating lamp can be deployed at various possible positions, the flashing state of the state indicating lamp can be conveniently and quickly checked as long as no middle shielding motion capture person exists, and the state of the inertial motion capture sensor is determined.

65. [107957773](#) WEARABLE DEVICE, GLOVE, ACTION CAPTURE DEVICE AND VIRTUAL REALITY SYSTEM CN - 24.04.2018

Int.Class [G06F 3/01](#) Appl.No 201610903863.9 Applicant BEIJING NOITOM TECHNOLOGY LTD. Inventor DAI RUOLI

The invention discloses a wearable device, a glove, an action capture device and a virtual reality system. The wearable device comprises a wearable body and at least one combination part, wherein the combination parts are arranged on the wearable body; and the combination parts are used for attaching electronic components, including an inertial sensor, to the wearable body. According to the wearable device, the electronic components can be attached to the wearable body through the combination parts, and the required electronic components can be worn in place just through one convenient wearing process.

66. [107886520](#) METHOD AND APPARATUS FOR DETERMINING RELATIVE POSITION RELATIONSHIP AMONG MULTIPLE OPTICAL MARKING POINTS CN - 06.04.2018

Int.Class [G06T 7/246](#) Appl.No 201610873653.X Applicant BEIJING NOITOM TECHNOLOGY LTD. Inventor ZHANG YUCHI

The invention discloses a method and an apparatus for determining a relative position relationship among multiple optical marking points, an optical tracking system, and a module, a property and a group of optical marking points tracked in the system. The optical marking points are used to be tracked in the optical tracking system. The method comprises the steps of enumerating the side lengths of triangles according to multiple preset parameter limitation conditions, thereby generating multiple legal triangles, wherein the legal triangles are non-isosceles non-equilateral triangles with the sides meeting the preset parameter limitation conditions; and by utilizing the legal triangles, determining the sizes of multiple legal rigid bodies, wherein the legal rigid bodies are rigid bodies meeting a condition that the triangle composed of any three vertexes of each rigid body is the legal triangle, and the vertexes of each legal rigid body in the multiple legal rigid bodies are used for setting the optical marking points.

67. [109765998](#) MOTION EVALUATION METHOD AND DEVICE BASED ON VR AND MOTION CAPTURE AND STORAGE MEDIUM CN - 17.05.2019

Int.Class [G06F 3/01](#) Appl.No 201811497750.9 Applicant BEIJING NOITOM TECHNOLOGY LTD. Inventor JIANG BIN

The invention relates to a motion evaluation method and device based on VR and motion capture and a storage medium, and the method comprises the steps of displaying a VR scene which contains a virtual reference object; collecting motion sensing data of each part of the body of the tested object during motion in real time; driving a virtual human body model corresponding to the tested object in the VR scene according to the motion sensing data of the tested object; determining motion parameters of the detected object according to the collected motion sensing data of the detected object; and according to the motion parameters, determining the motion quality of the tested object in motion. According to the method, the rehabilitation can be carried out in fun instead of monotonously executing rehabilitation training actions of machinery, and the interest of rehabilitation exercise is improved.

68. [109766882](#) HUMAN BODY LIGHT SPOT LABEL IDENTIFICATION METHOD AND DEVICE CN - 17.05.2019

Int.Class [G06K 9/32](#) Appl.No 201811550991.5 Applicant BEIJING NOITOM TECHNOLOGY LTD. Inventor MA HAO

The invention relates to a human body light spot label identification method and device, a computer device and a storage medium. The method comprises the steps of obtaining an image containing light spots; identifying light spots in the image; numbering the light spots according to preset conditions, obtaining the positions of human body key points obtained through calculation according to inertial sensor measurement data, matching the numbered light spots with the human body key points, obtaining the corresponding matching results, calculating the credibility of the matching results, and when the credibility is larger than the preset credibility, matching the light spots with the human body key points. By recognizing the corresponding relation between the light spots and the key points of the human body through the inertial sensor and the image data, the corresponding matching result is obtained, the credibility of the matching result is judged, the matching result meeting the preset credibility serves as the final recognition result, and the recognition accuracy is improved.

69. [109799906](#) METHOD AND DEVICE FOR DRAWING IN A VR SCENE BY UTILIZING AN ACTION CAPTURE GLOVE CN - 24.05.2019

Int.Class [G06F 3/01](#) Appl.No 201811642114.0 Applicant BEIJING NOITOM TECHNOLOGY LTD. Inventor DAI RUOLI

The embodiment of the invention relates to a method and a device for drawing in a VR (Virtual Reality) scene by utilizing an action capture glove. The method comprises the following steps of: obtaining a position and a first posture of a first action capture glove; determining a first gesture of a virtual glove corresponding to the first action capture glove in a VR scene based on the first gesture; determining a drawing tool corresponding to the first gesture; and when the first action capture glove moves, taking the position as a drawing initial position, and drawing a movement track of the first action capture glove in the VR scene based on the drawing tool. The embodiment of the invention can get rid of the constraint of a handle, enables the whole process of interaction between the user and the VR scene to be more comfortable and natural, is close to the drawing mode in the real scene of the user, and improves the authenticity of interaction between the user and the VR scene.

70. [112669413](#) ANIMATION PRODUCTION SYSTEM AND ANIMATION PRODUCTION METHOD BASED ON ACTION CAPTURE CN - 16.04.2021

Int.Class [G06T 13/00](#) Appl.No 202110009039.X Applicant BEIJING NOITOM TECHNOLOGY LTD. Inventor LIU WUDA

The invention provides an animation production system and an animation production method based on action capture. The animation production method comprises the following steps: fixing an action capture device on a limb part of a simulation model, wherein the simulation model is a model with the same limb structure as a to-be-manufactured animation character; controlling the limb part to act so as to enable the action capture device to generate action feature data representing limb actions; and associating the action feature data to a limb part corresponding to the animation character to achieve action production of the animation character. By adopting the animation production method provided by the invention to produce the action of the animation character, the limit action which cannot be shown by the conventional real person motion capture can be produced, and the non-humanoid animation character can be produced by adopting the action capture method. Moreover, by adopting the animation production system provided by the invention, animation production based on action capture can be achieved without a real person, so that the labor cost of animation capture can be reduced.

71. [110368007](#) CONTROL METHOD OF SPLICING BETWEEN OBJECTS

CN - 25.10.2019



Int.Class A61B 6/00 Appl.No 201910507135.X Applicant BEIJING NOITOM TECHNOLOGY LTD. Inventor JIANG BIN

The invention relates to the technical field of virtual reality, in particular to a control method of splicing between objects. The control method includes 1), respectively fixing a first contrast part and a second contrast part on a first to-be-spliced object and a second to-be-spliced object to form a first operation integral and a second operation integral; S2, meanwhile, forming a separated image of the relative position relationship between the first operation integral and the second operation integral in the first environment and the second environment; S3, in the second environment, according to the relative position relationship between the first to-be-spliced object and the second to-be-spliced object in the separated image, controlling and changing the relative position relationship as well as respective postures between the first contrast part and the second contrast part to have the first to-be-spliced object and the second to-be-spliced object spliced. With the control method, at least two objects which cannot be directly observed in position can be accurately and simply spliced together.

72. 113379599 INTER-OBJECT SPLICING CONTROL METHOD CN - 10.09.2021

Int.Class G06T 3/40 Appl.No 202110559829.5 Applicant BEIJING NOITOM TECHNOLOGY LTD. Inventor JIANG BIN

The invention relates to the technical field of virtual reality, in particular to an inter-object splicing control method. The inter-object splicing control method comprises the following steps: S1, respectively fixing a first contrast part and a second contrast part on a first to-be-spliced object and a second to-be-spliced object to form a first operation whole body and a second operation whole body; S2, in a first environment and a second environment at the same time, forming a separation image of a relative position relation between the first operation whole and the second operation whole; and S3, in the second environment, according to the relative position relationship between the first to-be-spliced object and the second to-be-spliced object in the separated image, controlling and changing the relative position relationship between the first contrast part and the second contrast part and the postures of the first contrast part and the second contrast part, and splicing the first to-be-spliced object and the second to-be-spliced object. By adopting the control method provided by the invention, at least two objects of which the positions cannot be directly observed can be accurately, simply and conveniently spliced together.

73. 108446201 WEARABLE DEVICE STATE DISPLAY METHOD AND DEVICE, COMPUTER STORAGE MEDIUM AND ELECTRONIC EQUIPMENT CN - 24.08.2018

Int.Class G06F 11/30 Appl.No 201810164416.5 Applicant BEIJING NOITOM TECHNOLOGY LTD. Inventor DAI RUOLI

Embodiments of the invention relate to a wearable device state display method and device, a computer storage medium and electronic equipment. In at least one embodiment, the method comprises the following steps of: obtaining a real-time state of each wearable device accessed to a wearable device management system; and displaying the obtained real-time states. According to the method, the real-timestates of the wearable devices can be displayed to managers so that the managers can know the real-time state of each wearable device in time.

74. 108803868 COLLECTION METHOD AND DEVICE FOR VR [VIRTUAL REALITY] SCENE EXPERIENCE CABIN DATA CN - 13.11.2018

Int.Class G06F 3/01 Appl.No 201810329805.9 Applicant BEIJING NOITOM TECHNOLOGY LTD. Inventor DAI RUOLI

The embodiment of the invention belongs to the technical field of virtual reality, particularly relates to a collection method and device for VR [Virtual Reality] scene experience cabin data and is used for collecting the information of a user who experiences in a VR scene experience cabin. The method comprises the following steps that: receiving an experience application message which carries user personal information; feeding back an experience passing message which carries cabin door unlocking information; obtaining the human-computer interaction information of a preset human-computer interaction system in the VR scene experience cabin; and on the basis of the human-computer interaction information, determining user experience information, wherein the user experience information comprises the category of an experienced product. By use of the embodiment of the invention, the experience application message sent from the user is received to determine the user personal information so as to feed back the cabin door unlocking information to the user; and if the user operates the human-computer interaction system, the human-computer interaction information can be obtained to determine the user experience information so as to realize VR scene experience cabin data collection, and therefore, data support is provided for subsequently carrying out customer relationship management, wherein the VR scene experience cabin data comprises the user personal information and the user experience information.

75. 208092662 MOTION CAPTURE GLOVES CN - 13.11.2018

Int.Class G06F 3/01 Appl.No 201820683302.7 Applicant BEIJING NOITOM TECHNOLOGY LTD. Inventor DAI RUOLI

The utility model relates to a motion capture gloves, this gloves body, the gloves body includes: wrist portion, palm portion and dactylothecca portion still include: fixed band and casing, the one end and the fixed connection of wrist portion of fixed band, and the scalable wrist portion that connects at the gloves body that encircles of fixed band, the casing passes through the fixed band setting in wrist portion, housing face is provided with the mounting surface, and the mounting surface is provided with a fixing device. The embodiment of the utility model provides a casing that can set up the hardware device through the fixed band encircles the wrist portion that sets up at the gloves body, and the fixed band can set up according to the size of user's wrist is flexible, not only can be suitable for different user's hand -types, can also make gloves and casing fix in user's wrist portion to mounting surface at the casing sets up a fixing device, makes things convenient for gloves and other part to advance line location and sets up, avoids appearing the offset.

76. 207637431 VIRTUAL REALITY DEMONSTRATES BLACK OR WHITE BOARD FOR WRITING TEMPORARY ACCOUNTS OR RECORDS ON CN - 20.07.2018

Int.Class G09F 9/00 Appl.No 201820315515.4 Applicant BEIJING NOITOM TECHNOLOGY LTD. Inventor DAI RUOLI

An embodiment of the utility model discloses a virtual reality demonstrates black or white board for writing temporary accounts or records on, include: black or white board for writing temporary accounts or records on casing, VR head shows, the VR controller, show the gesture that the cooperation used with the VR head and catch sensor, VR host computer and touch -sensitive screen, be provided with the mounting structure that is used for installing the VR head and shows on the black or white board for writing temporary accounts or records on casing, be used for installation posture to catch the 2nd mounting structure of sensor and be used for installing the 3rd mounting structure of touch -sensitive screen, and the inside of black or white board for writing temporary accounts or records on casing is provided with the accommodation space who is used for holding the VR host computer, VR head shows, VR controller, gesture seizure sensor and touch -sensitive screen are connected with the VR host computer respectively. The user shows through VR head can watch virtual exhibition thing, and the virtual scene that virtual exhibition thing was located is unanimous with real scene, and nevertheless the personnel in the not displayed reality scene in the virtual scene make the audio -visual problem of seeing exhibition thing, the more inconvenient observation of solution personnel of user.

77. 109785731 MAP CONSTRUCTING METHOD AND SYSTEM AND STORAGE MEDIUM CN - 21.05.2019

Int.Class G09B 29/00 Appl.No 201811642023.7 Applicant BEIJING NOITOM TECHNOLOGY LTD. Inventor ZHOU FENG



The invention relates to a map constructing method and system and a storage medium. The constructing method comprises the steps that a plurality of images are obtained inside a preset scene; all positioning points in each image are obtained, the image quality of each image is determined according to the positioning points, and qualified images are selected according to the image quality; according to the positioning points of all the qualified images, positioning point distribution information is obtained; according to the positioning point distribution information, whether or not a region with the positioning point distribution density smaller than the preset density exists inside the preset scene is determined according to the positioning point distribution information; if not, according to the positioning points of all the qualified images, a map is constructed. According to the map constructing method and system, by obtaining the images inside the preset scene, the image quality is determined according to the positioning points in the images, the qualified images are selected according to the image quality, the positioning point distribution information in the qualified images is determined, whether or not the positioning point distribution density is large enough is determined, the map is constructed by means of the qualified images with the qualified positioning point distribution density, and the precision of the finally constructed map is ensured.

78. [208741913](#) FIXED HANDLE'S ADAPTER

CN - 16.04.2019

Int.Class [A63F 13/98](#) Appl.No 201820683387.9 Applicant BEIJING NOITOM TECHNOLOGY LTD. Inventor DAI RUOLI

The utility model relates to a fixed handle's adapter including body and fixing of handles hoop, fixed mounting portion and fixed mounting portion dislocation set's location portion is provided with in the first side of body, the one end of fixing of handles hoop rotationally is connected with the body, the other end and body joint, the other end of fixing of handles hoop is with the body joint when fixed, the body with the cooperation of fixing of handles hoop the chucking wait the optics handle fixed, the adapter still includes the arm fixed part with this body coupling. The front side of adapter can be fixed with the rear portion connection structure that hand action caught gloves through fixed mounting portion and location portion, and the rear side is bound on user's forearm through the arm fixed part, and the adapter takes place the displacement for the arm when avoiding the user to move. The fixing of handles hoop can press from both sides tight optics handle with the cooperation of body, can realize optics handle fixing for the adapter.

79. [109768845](#) DATA PROCESSING METHOD AND DEVICE AND STORAGE MEDIUM

CN - 17.05.2019

Int.Class [H04L 1/00](#) Appl.No 201811632633.9 Applicant BEIJING NOITOM TECHNOLOGY LTD. Inventor ZHANG JINLIANG

The embodiment of the invention relates to a data processing method, a data processing device and a storage medium. The method comprises the following steps: a first sequence in which a plurality of data receiving ends send data acquisition requests to a plurality of data sending ends is determined; the plurality of data receiving ends send the data acquisition requests to the plurality of data sending ends in sequence according to the first sequence and a set time interval; and each data receiving end receives the first data information sent by the plurality of data sending ends based on the data acquisition request. A plurality of data receiving ends are adopted to receive the data information collected by the data sending end at intervals, so that the problem of data loss when a single data receiving end cannot receive the data information collected by the data sending end is avoided, measurement data can be accurately obtained without omission when interference exists, and the measurement accuracy is improved.

80. [107943271](#) MOTION DATA DETECTION METHOD, DEVICE AND SYSTEM

CN - 20.04.2018

Int.Class [G06F 3/01](#) Appl.No 201610884115.0 Applicant BEIJING NOITOM TECHNOLOGY LTD. Inventor LIU HAORYANG

The invention relates to a motion data detection method, device and system. The method comprises the following steps that: a first terminal collects first motion data, wherein the first motion data comprises the acceleration data and the angular velocity data of the first position motion of a first object; the first terminal collects second motion data, wherein the second motion data comprises the acceleration data and the angular velocity data of the second position motion of the first object; the first terminal obtains a corresponding first position parameter and a corresponding second position parameter independently according to the first motion data and the second motion data; the first terminal sends the first position parameter and the second position parameter to a server; and the server detects the motion state of the first object according to the first position parameter and the second position parameter, and outputs first detection result information. By use of the method, device and system provided by the invention, the motion gesture information of the object can be obtained through the position parameter of the motion position of the object so as to realize the assessment of the motion quantity and the motion performance of the object.

81. [208271130](#) MOTION CAPTURE GLOVES THAT CAN EMBEDDED SENSOR

CN - 21.12.2018

Int.Class [G06F 3/01](#) Appl.No 201820682685.6 Applicant BEIJING NOITOM TECHNOLOGY LTD. Inventor DAI RUOLI

The utility model relates to a motion capture gloves that can embedded sensor, these gloves include: palm portion and at least one dactylothea portion, wherein, every dactylothea portion all is connected with palm portion, and the inner space of every dactylothea portion and palm portion inner space communicate, still include: mount layer, mount layer set up dactylothea portion and palm portion with one side on the surface, installation space of superficial formation in dactylothea portion and gloves portion, mount layer's shape and the shape phase-match after palm portion and the combination of at least one dactylothea portion. The embodiment of the utility model provides an in set up mount layer through the surface at gloves, form a mount layer between mount layer and the gloves, through this mount layer sensor installation, avoid the sensor to expose at surface of gloves to reduce the condition that the sensor received mechanical damage, avoid the problem that the sensor drops and lose simultaneously in the use.

82. [109556763](#) PLANE SENSOR, A PLANE PRESSURE DETECTION DEVICE AND PRESSURE DETECTION METHOD

CN - 02.04.2019

Int.Class [G01L 1/00](#) Appl.No 201811588297.2 Applicant BEIJING NOITOM TECHNOLOGY LTD. Inventor JIANG NAN

Embodiments of the invention relate to a plane sensor, a plane pressure detection device and a pressure detection method. The plane sensor comprises a first conductive bar group, a pressure sensing conductive material layer and a second conductive bar group, wherein the first conductive bar group is in contact with a first surface of the pressure sensing conductive material layer; the second conductive bar group is in contact with a second surface of the pressure sensing conductive material layer; the first conductive bar group and the second conductive bar group respectively comprise a plurality of mutually isolated conductive bars; and projections of the conductive bars in the first conductive bar group and projections of the conductive bars in the second conductive bar group are crossed on the pressure sensing conductive material layer. Compared with existing pressure plates spliced by a plurality of pressure sensors, the plane sensor with a three-layer structure is simple in structure, does not need complicated circuits for obtaining pressure sensor data, and is lower in cost and simpler in process.

83. [109528208](#) OPTICAL AND INERTIAL HYBRID MOTION CAPTURE SYSTEM

CN - 29.03.2019

Int.Class [A61B 5/11](#) Appl.No 201811326589.9 Applicant BEIJING NOITOM TECHNOLOGY LTD. Inventor LIU WEIFU

The invention relates to an optical and inertial hybrid motion capture system including an inertial data receiver, multiple motion capture cameras, multiple optical and inertial hybrid acquisition modules and multiple inertial acquisition modules. Each optical and inertial hybrid acquisition module includes an inertial acquisition module and at least one optical marking point, and the optical marking point and the inertial acquisition module are fixed with each other; each inertial acquisition module includes an inertial sensor and an inertial data transmitter; each inertial acquisition module includes an inertial sensor and an inertial data transmitter; the inertial data receiver receives inertial data transmitted by the inertial data transmitter through a wireless mode,



and each motion capture camera detects optical data of the optical marker points in each optical and inertial hybrid acquisition module. Each optical and inertial hybrid acquisition module can simultaneously acquire inertial data and optical data of a same part, so as to solve the problem of low accuracy caused by single inertial data or optical data.

84. **108364412** VR SCENE EXPERIENCE CABIN

CN - 03.08.2018

Int.Class G07F 17/14 Appl.No 201810329765.8 Applicant BEIJING NOITOM TECHNOLOGY LTD. Inventor DAI RUOLI

The embodiment of the invention relate to the technical field of virtual reality, in particular to a VR scene experience cabin including a cabin body, a cabin door, an electronic access control system, a human-computer interaction system, a communication device, a data processing device and a VR system. The VR system includes a VR head display, a VR controller and a VR mainframe. The data processing device obtains user's relevant information from the electronic access control system, the human-computer interaction system, the communication device and/or the VR mainframe. After the electronic access control system opens the cabin door of the VR scene experience cabin, the user can enter the cabin body of the VR scene experience cabin, select the VR content he is interested in through the human-computer interaction system disposed in the cabin body and use the VR head display to view the VR content, and the VR mainframe obtains an operation instruction of the VR controller used by the user and performs corresponding processing on the VR content according to the operation instruction, to achieve interaction between the use of the VR controller by the user and a VR scene corresponding to the VR content and improve user experience.

85. **111240468** CALIBRATION METHOD AND DEVICE FOR HAND MOTION CAPTURE, ELECTRONIC EQUIPMENT AND STORAGE MEDIUM

CN - 05.06.2020

Int.Class G06F 3/01 Appl.No 201911415808.5 Applicant BEIJING NOITOM TECHNOLOGY LTD. Inventor MA HAO

The invention relates to a calibration method and device for hand motion capture and a computer storage medium. The method comprises the steps: acquiring the reference position and posture of a preset hand under an equipment coordinate system through Leap Motion equipment with the non-fixed position; acquiring a first spatial position and attitude of the first tracker in a first world coordinate system; acquiring a second spatial position and attitude of a second tracker in the first world coordinate system; acquiring a third spatial attitude of the motion sensor under a second world coordinate system according to the motion data; obtaining coordinate conversion parameters of the first world coordinate system and the second world coordinate system; determining calibration parameters according to the reference position and attitude, the first and second spatial positions, the first, second and third spatial attitudes and the coordinate conversion parameters; and calculating the spatial position and posture of the preset hand by using the calibration parameters. The Leap Motion equipment and the two trackers are used for improving the measurement and calibration precision of the hand position and posture.

86. **110338875** PUNCHING CONTROL METHOD BASED ON VIRTUAL REALITY TECHNOLOGY

CN - 18.10.2019

Int.Class A61B 17/17 Appl.No 201910507863.0 Applicant BEIJING NOITOM TECHNOLOGY LTD. Inventor JIANG BIN

The invention relates to the technical field of virtual reality, in particular to a punching control method based on a virtual reality technology. The punching control method comprises the steps as follows: S1, forming a visible image of a to-be-punched object in a first environment; S2, selecting a preset position of the axis of a hole in the to-be-punched object according to the visible image; S3, forming a combined image of the to-be-punched object and punching equipment in the first environment and a second environment; S4, controlling the punching equipment to work according to the preset position and the relative position relation between the punching equipment and the to-be-punched object in the combined image, forming the hole with set diameter and set length in the to-be-punched object. The punching control method provided by the invention can form holes in objects which cannot be observed or cannot be always observed, and the position and accuracy of the formed holes can meet use requirements.

87. **109766001** UNIFIED METHOD AND SYSTEM FOR COORDINATE SYSTEMS OF DIFFERENT MR DEVICES AND STORAGE MEDIUM

CN - 17.05.2019

Int.Class G06F 3/01 Appl.No 201811642044.9 Applicant BEIJING NOITOM TECHNOLOGY LTD. Inventor ZHOU FENG

The invention relates to a unification method and system for coordinate systems of different MR devices and a storage medium, and the method comprises the steps of taking any point of a preset space as a reference point, and obtaining the relative position and rotation information of each calibration plate in the preset space relative to the reference point; binding each MR device with the corresponding calibration board; establishing a global coordinate system taking the reference point as an original point; and unifying the relative position and rotation information corresponding to the original coordinate system of each MR device into a global coordinate system. According to the embodiment of the invention, the calibration plate and the reference point are arranged in the preset space; the MR devices and the calibration plate are bound, the position of each MR device in the global coordinate system established with the reference calibration plate as the original point is determined according to the relative positions and rotation information of the calibration plate and the reference point, the MR devices correspond to the same global coordinate system, and interaction of the different MR devices in the same scene is achieved.

88. **109474639** DATA DISTRIBUTION METHOD AND SYSTEM, AND COMPUTER READABLE STORAGE MEDIUM

CN - 15.03.2019

Int.Class H04L 29/06 Appl.No 201811646899.9 Applicant BEIJING NOITOM TECHNOLOGY LTD. Inventor HE YUANHUI

The invention relates to a data distribution method and system, and a computer readable storage medium. The method comprises the following steps: establishing communication connections with display nodes; presetting transmission types of the display nodes, and preconfiguring different transmission parameters for different types of display nodes; determining the transmission type of the display node to be processed, and obtaining the corresponding transmission parameters according to the determined transmission type; and transmitting data to the to-be-processed node by using the obtained transmission parameters. By adoption of the data distribution method and system provided by the embodiment of the invention, for the data which cause a change in the viewing angle during the rendering process, a lower update rate and a low transmission delay are guaranteed, and for data which cause no change in the viewing angle, a lower update rate and a higher compression rate are guaranteed, thereby ensuring the normal work of the nodes and optimizing the user experience in a VR scene.

89. **113413189** PUNCHING CONTROL METHOD BASED ON VIRTUAL REALITY TECHNOLOGY

CN - 21.09.2021

Int.Class A61B 17/17 Appl.No 202110553959.8 Applicant BEIJING NOITOM TECHNOLOGY LTD. Inventor JIANG BIN

The invention relates to the technical field of virtual reality, in particular to a punching control method based on the virtual reality technology. The punching control method comprises the steps that S1, in a first environment, a visible image of an object to be punched is formed; S2, according to the visible image, a preset position where the axis of a hole in the to-be-punched object is located is selected; S3, a combined image of the to-be-punched object and punching equipment is formed in the first environment and the second environment at the same time; and S4, in the second environment, according to the preset position and the relative position relation between the punching equipment and the to-be-punched object in the combined image, the punching equipment is controlled to work, and a hole with the set diameter and the set length is formed in the to-be-punched object. By adopting the punching control method provided by the invention, the hole can be formed in the object which cannot be directly observed or cannot be always observed, and the position and the precision of the formed hole can meet the use requirements.

90. [108399011](#) ACTION CAPTURE MODULE AND HAND ACTION CAPTURE GLOVES

CN - 14.08.2018

Int.Class [G06F 3/01](#) Appl.No 201810433747.4 Applicant BEIJING NOITOM TECHNOLOGY LTD. Inventor DAI RUOLI

The invention relates to an action capture module and hand action capture gloves adopting the action capture module. The action capture module comprises a shell, an inertial sensor arranged in an inner cavity of the shell and an external lead which penetrates through the shell and is electrically connected with the inertial sensor; a first hook-and-loop fastener with the loop surface facing the outer side is arranged on the surface of the shell. Since the bonding strength of the first hook-and-loop fastener and a second hook-and-loop fastener is high, it can be guaranteed that the action capture module does not fall off during use, and it is guaranteed that the limb action of a user is accurately detected through action signals generated by the inertial sensor.

91. [108427506](#) MOTION CAPTURE GLOVE

CN - 21.08.2018

Int.Class [G06F 3/01](#) Appl.No 201810433763.3 Applicant BEIJING NOITOM TECHNOLOGY LTD. Inventor DAI RUOLI

The invention relates to a motion capture glove which comprises a glove body. The glove body comprises a wrist part, a palm part and a finger cot part, and further comprises a fixing belt and a shell; one end of the fixing belt is fixedly connected with the wrist part, and the fixing belt is connected at the wrist part of the glove body in a stretchable and encircled mode; the shell is arranged at the wrist part through the fixing belt; a surface of the shell is provided with an installation surface, and the installation surface is provided with a first fixing device. By the fixing belt, the shell capable of arranging a hardware device is arranged at the wrist part of the glove body in an encircled manner through the fixing belt, the fixing belt can be arranged in a stretchable mode according to the size of a wrist of a user, not only can the glove be applied to hand shapes of different users, but also the glove and the shell can be fixed at the wrist part of the user, the installation surface of the shell is provided with a first fixing device, thus facilitating location and arrangement of the glove and other parts, and the position deviation is prevented from appearing.

92. [109767481](#) VR SCENE SWITCHING METHOD AND DEVICE

CN - 17.05.2019

Int.Class [G06T 13/80](#) Appl.No 201811647011.3 Applicant BEIJING NOITOM TECHNOLOGY LTD. Inventor DAI RUOLI

The embodiment of the invention relates to a VR scene switching method and device. The method comprises the steps of obtaining a VR scene switching animation; when the original VR scene is played to a preset switching trigger position, playing the VR scene switching animation above the original VR scene, and loading a VR scene to be switched; and when the loading of the to-be-switched VR scene is finished, playing the to-be-switched VR scene animation. According to the embodiment of the invention, the switching animation can be displayed in the process of switching the original VR scene into the to-be-switched VR scene; on one hand, the scene jamming problem caused by directly playing the to-be-switched VR scene can be reduced, and on the other hand, the user can distinguish different VR scenes, the understanding of the user on the VR scene can be enhanced, and the use of the user is facilitated.

93. [109528207](#) ACTION EVALUATION METHOD, DEVICE AND STORAGE MEDIUM

CN - 29.03.2019

Int.Class [A61B 5/11](#) Appl.No 201811314512.X Applicant BEIJING NOITOM TECHNOLOGY LTD. Inventor LIU WEIFU

The invention relates to an action evaluation method, device and storage medium, wherein the method includes the steps: acquiring an action mode of a to-be-tested action; acquiring configuration data of the action mode; with use of an inertial action capture device, detecting sensing data of a to-be-tested object when performing the to-be-tested action; determining test data corresponding to each test item according to the sensing data; and according to the test data and test parameters of each test item, evaluating the action quality of the to-be-tested object performing the to-be-tested action. The method uses multiple test items in the to-be-tested action for evaluation of the to-be-tested action, thereby making the evaluation of the action more accurate.

94. [109787740](#) SENSOR DATA SYNCHRONIZATION METHOD AND DEVICE, TERMINAL EQUIPMENT AND STORAGE MEDIUM

CN - 21.05.2019

Int.Class [H04L 7/00](#) Appl.No 201811588298.7 Applicant BEIJING NOITOM TECHNOLOGY LTD. Inventor LIU WUDA

The embodiment of the invention relates to a synchronization method and device of sensor data terminal equipment and a storage medium, and the method comprises the steps that the terminal equipment sends a data reporting request to a first sensor and a second sensor, so that the first sensor and the second sensor report data to the terminal equipment according to a set time interval based on a moment corresponding to the data reporting request; Receiving first data sent by the first sensor, wherein the first data comprises time information and frame number information; Receiving second data sent by the second sensor, wherein the second data comprises time information and frame number information; And synthesizing the first data and the second data according to a time sequence and a frame number sequence to generate synchronous data. And the generated synchronous data can comprehensively reflect the standard degree of the movement behavior of the user or guide the user to perform movement rehabilitation training, so that the experience of the movement behavior of the user is improved.

95. [209279987](#) CONNECTING MECHANISM FOR POSITION AND POSTURE NAVIGATION

CN - 20.08.2019

Int.Class [G01C 21/00](#) Appl.No 201822245587.9 Applicant BEIJING NOITOM TECHNOLOGY LTD. Inventor JIANG BIN

The utility model relates to the technical field of virtual reality, in particular to a connecting mechanism for position and posture navigation. The connecting mechanism for position and posture navigation is used for fixedly connecting a to-be-navigated object and a navigation mechanism and comprises a fixing part and a connecting part, and the fixing part is arranged to be fixed relative to the to-be-navigated object; wherein the connecting part is fixedly connected with the fixing part, and the connecting part is arranged to be fixedly connected with the navigation mechanism in a detachable connection mode. According to the connecting mechanism provided by the utility model, the navigation mechanism can be fixedly connected to an object to be navigated, so that the subsequent position and posture navigation work can be conveniently carried out.

96. [209279827](#) CALIBRATION PLATE FOR FIXING MR HEAD-MOUNTED DISPLAY

CN - 20.08.2019

Int.Class [G01B 5/00](#) Appl.No 201822275946.5 Applicant BEIJING NOITOM TECHNOLOGY LTD. Inventor ZHOU FENG

The utility model discloses a calibration plate for fixing an MR head-mounted display. Calibration board, the calibration plate comprises a left handle bottom support, a head display bottom support, a right handle bottom support, a calibration substrate and a positioning area. Wherein a positioning area is arranged in the middle of the calibration substrate; a head-mounted display bottom support is arranged above the positioning area; a left hand shank bottom support is arranged on the left side of the head-mounted display bottom support; a right handle bottom support is arranged on the right side of the head display bottom support; the head-mounted display bottom support comprises a first limiting plate, a second limiting plate and a supporting piece. A second limiting plate is arranged on the side wall of the supporting piece; according to the utility model, the head-mounted display bottom support and the left-right hand shank bottom support are made by fully researching the appearance design of the head-mounted display and the left-right hand shank; the device is simple

in structure and extremely strong in pertinence, and can ensure that the head-mounted display and the left and right hand handles are not shaken and in other unstable states when being placed on the bottom support, thereby achieving the purpose of assisting the head-mounted display in completing calibration operation and facilitating position positioning in a virtual environment.

97. **109675289** MOTION ESTIMATION SYSTEM BASED ON VR [VIRTUAL REALITY] AND MOTION CAPTURE CN - 26.04.2019

Int.Class **A63B 71/06** Appl.No 201811497749.6 Applicant BEIJING NOITOM TECHNOLOGY LTD. Inventor JIANG BIN

The invention relates to a motion estimation system based on VR (Virtual Reality) and motion capture. The motion estimation system is characterized by comprising VR display equipment, motion capture equipment, data processing equipment and storage equipment, wherein the VR display equipment, the motion capture equipment and the storage equipment are connected with the data processing equipment; VR scenes are stored in the storage equipment; and the data processing equipment comprises a driving module, a motion parameter determining module and a motion quality determining module. The system can realize the aim of rehabilitating with pleasure and monotonous mechanical rehabilitation training actions are avoided, so that the interests of rehabilitation motions are improved.

98. **111240469** CALIBRATION METHOD AND DEVICE FOR HAND MOTION CAPTURE, ELECTRONIC EQUIPMENT AND STORAGE MEDIUM CN - 05.06.2020

Int.Class **G06F 3/01** Appl.No 201911415837.1 Applicant BEIJING NOITOM TECHNOLOGY LTD. Inventor MA HAO

The invention relates to a calibration method and device for hand motion capture, electronic equipment and a storage medium. The method comprises the steps: acquiring the reference position and the reference posture of a preset hand under at least two hand postures under an equipment coordinate system through Leap Motion equipment with the fixed position; acquiring motion data acquired by a motion sensor of a preset hand in at least two hand postures; acquiring a spatial attitude of the motion sensor under a world coordinate system according to the motion data; determining a coordinate conversion parameter between the equipment coordinate system and the world coordinate system; determining a position calibration parameter and an attitude calibration parameter of a preset hand according to the reference position, the reference attitude, the coordinate conversion parameter and the spatial attitude of the motion sensor in the world coordinate system; and calculating the hand position and posture of the preset hand in the world coordinate system by using the position calibration parameter and the posture calibration parameter. According to the embodiment of the invention, the Leap Motion equipment is used for improving the measurement and calibration precision of the hand position and posture in a visual range under the condition of no shielding.

99. **112465902** METHOD AND DEVICE FOR DETERMINING POSITION OF OPTICAL TRACKING MARKING BALL FOR ORTHOPEDIC SURGERY CN - 09.03.2021

Int.Class **G06T 7/70** Appl.No 202011472103.X Applicant BEIJING NOITOM TECHNOLOGY LTD. Inventor LI TILEI

The invention discloses a method and device for determining the position of an optical tracking marking ball for orthopedic surgery. The method comprises the steps: acquiring 3D model data output after CT scanning; judging whether the m-th vertex and the corresponding i-th ring adjacent vertex have a common sphere center or not; if yes, adding a coordinate array from the first sphere center coordinate to the m-th vertex, enabling i to be equal to i + 1, and repeating the judgment step again under the condition that i is less than N; if not, deleting the coordinate array of the m-th vertex; solving a second sphere center coordinate corresponding to each undeleted coordinate array, wherein the second sphere center coordinates are average values of the first sphere center coordinates in the undeleted coordinate array; and calculating the average value of the second sphere center coordinates as the sphere center coordinates of the marking sphere. In practical application, the coordinate arrays corresponding to some vertexes at the joint of the marking ball and the bearing object can be deleted by adopting the method, and the influence of the coordinate arrays on the calculation of the coordinates of the center of sphere is eliminated, so that the influence of the vertexes on the spherical surface of the non-marking ball on the calculated center of sphere of the marking ball is eliminated.

100. **112754472** METHOD AND DEVICE FOR CALIBRATING SENSOR IN MOTION CAPTURE SYSTEM CN - 07.05.2021

Int.Class **A61B 5/11** Appl.No 202110007732.3 Applicant BEIJING NOITOM TECHNOLOGY LTD. Inventor LI HONGCE

The invention relates to a method and device for calibrating a sensor in a motion capture system. The method comprises the following steps of generating calibration areas with identification numbers based on preset positioning identifiers; when a moving object wearing a plurality of sensors enters any calibration area, acquiring original position information of the sensors; according to the original position information of the sensors, determining a corresponding relation between the sensors and a key part of the moving object; matching the spatial range of the calibration area with the original position information, and distributing the identification number of the calibration area to the corresponding sensor and/or moving object according to a matching result; and when the moving object with the identification number is in a specified posture, collecting target position information of the sensors, and determining initial parameters of the moving object with the identification number based on the corresponding relation and the target position information, wherein the initial parameters are used for being input into the motion capture system for calculation. According to the invention, the difficulty of wearing the sensors can be simplified, and the difficulty of obtaining the initial parameters is reduced.

101. **112781589** POSITION TRACKING EQUIPMENT AND METHOD BASED ON OPTICAL DATA AND INERTIAL DATA CN - 11.05.2021

Int.Class **G01C 21/16** Appl.No 202110009066.7 Applicant BEIJING NOITOM TECHNOLOGY LTD. Inventor HE YUANHUI

The invention relates to position tracking equipment and a position tracking method based on optical data and inertial data. The position tracking equipment comprises an optical camera, a processor, a plurality of optical rigid bodies of the same topological structure, and inertial sensors fixed in the optical rigid bodies, wherein the optical camera and the inertial sensors are connected with the processor; and different inertial sensors are provided with different identities. The position tracking method comprises the steps of: when the optical rigid bodies rotate to be located at different positions, collecting inertial data through using the inertial sensors; collecting optical data of each optical rigid body through adopting the optical camera; and receiving a plurality of pieces of the optical data and the inertial data through using the processor, determining a matching relationship between the optical rigid bodies and the inertial sensors according to the inertial data and the optical data, and marking the optical rigid bodies having the matching relationship with the inertial sensors by adopting an identity label of the inertial sensor. According to the position tracking equipment and the position tracking method, the accommodating number of optical rigid bodies in the same field can be increased.

102. **113952032** SPACE TRACKING EQUIPMENT FOR ORTHOPEDIC SURGERY CN - 21.01.2022

Int.Class **A61B 34/20** Appl.No 202111561696.1 Applicant BEIJING NOITOM TECHNOLOGY LTD. Inventor ZHOU FENG

The invention relates to the field of orthopedic surgeries, in particular to space tracking equipment for an orthopedic surgery. The equipment comprises a rigid body, a connecting bracket and a steel nail; the rigid body is connected with one end of the connecting bracket; the other end of the connecting bracket is connected with the steel nail; a through hole is formed in the rigid body; a light reflecting sheet is arranged in the through hole; and the light reflecting sheet is used for reflecting infrared light so as to position the rigid body. By means of the arrangement, it can be guaranteed that in the current orthopedic

surgery process, the situation that the light reflecting sheet of the space tracking equipment has installation errors in the disinfection and repeated disassembly and assembly processes to cause reduction of the tracking precision is avoided; it can be guaranteed that structure reflection and rigid material reflection in orthopedic surgery navigation cannot affect the optical tracking precision; and it can be guaranteed that in the orthopedic surgery application process of the space tracking equipment, the situation that the light reflecting effect of the light reflecting sheet is reduced due to repeated disinfection of the equipment to cause reduction of the tracking precision is avoided.

103. [108426571](#) LOCAL REAL-TIME CALIBRATION METHOD AND DEVICE FOR ELECTRONIC COMPASS

CN - 21.08.2018

Int.Class [G01C 17/38](#) Appl.No 201810191456.9 Applicant BEIJING NOITOM TECHNOLOGY LTD. Inventor LIU HAOYANG

An embodiment of the invention relates to a local real-time calibration method and device for an electronic compass. The method comprises the following steps: obtaining geomagnetic measurement data of the electronic compass; updating a geomagnetic measurement data sample model on the basis of the geomagnetic measurement data and the preset geomagnetic measurement data sample model; obtaining hardmagnetic interference and soft magnetic interference of the electronic compass with a preset ellipsoid fitting strategy on the basis of the updated geomagnetic measurement data sample model; calibrating the electronic compass on the basis of the hard magnetic interference and the soft magnetic interference. According to the embodiment of the invention, the acquired geomagnetic measurement data is used for updating the geomagnetic measurement data sample model instead of being stored, all that is required is to store the updated geomagnetic measurement data sample model, so that the geomagnetic measurement data sample model can be updated in real time even when the electronic compass is used normally, the electronic compass is calibrated in real time, independent calibration of the electronic compass is not needed, user experience is improved, and space for storing the geomagnetic measurement data is saved.

104. [207571697](#) OPTICS MOTION CAPTURE TRACKS MODULE

CN - 03.07.2018

Int.Class [G06F 3/01](#) Appl.No 201820382270.7 Applicant BEIJING NOITOM TECHNOLOGY LTD. Inventor DAI RUOLI

The embodiment of the utility model provides an optics motion capture tracks module is related to, include: base and spatial distribution's at least three reflecting component, at least three reflecting component's spatial layout is asymmetric, and this spatial layout is arranged in only discernment optics motion capture tracks module and position and the gesture of only definite optics motion capture tracks module in the space, at least three reflecting component installs on the base, and the surface of outstanding base. The embodiment of the utility model provides an at least three reflecting component through the distribution of installation space on the base, dynamic natural frequency in the VR scene can gather reflecting component's reverberation, and then make the VR computer to divide different optics motion capture tracks module and position and gesture according to reflection light zone, use different optics motion capture tracks module as different users, the VR computer the different optics motion capture tracks module's of discernment basis go up can satisfy in same simulated environment that a plurality of users experience simultaneously and each other alternately.

105. [109600603](#) VR PANORAMIC VIDEO DISPLAY METHOD AND DEVICE AND COMPUTER READABLE STORAGE MEDIUM

CN - 09.04.2019

Int.Class [H04N 13/30](#) Appl.No 201811626263.8 Applicant BEIJING NOITOM TECHNOLOGY LTD. Inventor LI TIEI

The invention relates to a VR panoramic video display method and device and a computer readable storage medium. The method comprises the following steps: obtaining a left eye video stream and a right eye video stream; establishing a left eye spherical mapping layer and a right eye spherical mapping layer when the left eye video stream and the right eye video stream meet panoramic video conditions; rendering a frame image in the left eye video stream to the left eye spherical mapping layer, and rendering a frame image in the right eye video stream to the right eye spherical mapping layer; and displaying the frame image rendered on the left eye spherical mapping layer in a first display screen, and displaying the frame image rendered on the right eye spherical mapping layer in a second display screen. According to the embodiment of the invention, when parallax exists between the left-eye video stream and the right-eye video stream, the problem of ghosting or image repetition of the frame image of the displayed panoramic video is avoided, the stereoscopic impression and the image fluency of the frame image display are enhanced, and the watching experience of a user is improved.

106. [109646939](#) NAVIGATION MECHANISM

CN - 19.04.2019

Int.Class [A63F 13/213](#) Appl.No 201811628565.9 Applicant BEIJING NOITOM TECHNOLOGY LTD. Inventor JIANG BIN

The invention relates to the technical field of virtual reality, in particular to a navigation mechanism. The navigation mechanism comprises a body, an action sensor and at least three reflecting assemblies, wherein the body is fixedly connected with a to-be-navigated object; the reflecting assemblies are connected to the surface of the body in a protruded manner, and the spatial arrangement of the reflecting assemblies are asymmetric; the action sensor is mounted in the body; and the spatial arrangement of the three reflecting assemblies and the action sensor are used for determining the position and the posture of the to-be-navigated object in space. The navigation precision of the navigation mechanism provided by the invention is relatively high.

107. [109674535](#) POSITION AND POSTURE NAVIGATION INSTRUMENT

CN - 26.04.2019

Int.Class [A61B 34/20](#) Appl.No 201811628571.4 Applicant BEIJING NOITOM TECHNOLOGY LTD. Inventor JIANG BIN

The invention relates to the technical field of virtual reality and specifically relates to a position and posture navigation instrument. The position and posture navigation instrument comprises a connecting mechanism and a navigation mechanism; the connecting mechanism is fixed relative to a to-be-navigated object; the navigation mechanism comprises a main body and at least three reflecting components; the main body is fixedly connected with the connecting mechanism; at least three reflecting components are in bulged connection with the surface of the main body and are arranged on the exterior of the to-be-navigated object; spatial arrangement of at least three reflecting components is asymmetrical; the reflecting components are used for confirming position and posture of the to-be-navigated object in space. The position and posture navigation instrument provided by the invention is used for simply and conveniently acquiring the posture and action of the to-be-navigated object and is convenient for subsequent operation for the to-be-navigated object.

108. [109782908](#) METHOD AND DEVICE FOR SIMULATING MEASUREMENT IN VR SCENE

CN - 21.05.2019

Int.Class [G06F 3/01](#) Appl.No 201811641980.8 Applicant BEIJING NOITOM TECHNOLOGY LTD. Inventor GUO CONG

The embodiment of the invention relates to a method and a device for simulation measurement in a VR scene. The method comprises: a virtual engineering object is displayed in the VR scene, and an environmental factor corresponding to to-be-measured data is applied to the virtual engineering object; Detecting whether a virtual interaction device corresponding to the VR interaction device in the VR scene adds a virtual collection device for collecting the to-be-detected data to the virtual engineering object or not; If yes, determining an adding position of the virtual acquisition device; And obtaining and displaying measurement data corresponding to the to-be-measured data at the adding position, wherein the measurement data is generated according to the actual physical attribute change of an actual engineering object corresponding to the virtual engineering object when the actual engineering object is affected by the environmental factor in the actual environment. According to the embodiment of the invention, the VR scene is used for simulating the influence of environmental factors on the actual engineering object in the real scene, a user does not need to go to the site for measurement, operation is convenient, and safety accidents can be reduced.



109. [111681281](#) CALIBRATION METHOD AND DEVICE FOR LIMB MOTION CAPTURE, ELECTRONIC EQUIPMENT AND STORAGE MEDIUM CN - 18.09.2020

Int.Class [G06T 7/73](#) Appl.No 202010301553.6 Applicant BEIJING NOITOM TECHNOLOGY LTD. Inventor LIU WEIFU

The invention relates to a calibration method and device for limb motion capture, electronic equipment and a storage medium. The method comprises the steps: acquiring the reference position and the reference posture of a measured object under an equipment coordinate system under multiple preset postures with the same orientation are acquired through video motion capture equipment with the fixed position; acquiring the spatial attitude of the motion sensor of the measured object under various preset attitudes under a world coordinate system; determining a coordinate conversion parameter between the equipment coordinate system and the world coordinate system; determining a position calibration parameter and a posture calibration parameter of each limb of the measured object according to the reference position, the reference posture and the coordinate conversion parameter; and calculating the spatial position of each limb of the measured object in a world coordinate system by using the position calibration parameter, and calculating the mounting posture of the motion sensor relative to the limb on which the motion sensor is mounted by using the posture calibration parameter. According to the invention, accurate calibration of position calibration and attitude calibration of the measured object and accurate measurement of limb size are realized.

110. [111724483](#) IMAGE TRANSPLANTATION METHOD CN - 29.09.2020

Int.Class [G06T 19/00](#) Appl.No 202010300733.2 Applicant BEIJING NOITOM TECHNOLOGY LTD. Inventor WANG KAN

The invention relates to the technical field of virtual reality, in particular to an image transplantation method. The method comprises the following steps: forming a 3D model of a reference object; forming a planar model of the combined object; wherein the planar model comprises planar images of the reference object and the to-be-transplanted part; matching postures of reference objects in the 3D model and the plane model; and transplanting the plane image of the to-be-transplanted part in the plane model into the 3D model according to the relative position relationship between the reference object in the plane model and the plane image of the to-be-transplanted part. Using the method, after the overall structure of the reference object is independently obtained, the integral structure of the reference object and the to-be-transplanted part does not need to be obtained again; only the reference object and the plane model of the to-be-transplanted part need to be formed, the plane image of the to-be-transplanted part is transplanted into the 3D model, according to the newly formed model, the relative position of the to-be-transplanted part and the reference object can be determined, a worker can also carry out the subsequent operation process according to the new 3D model, and the method is simple and convenient.

111. [113017610](#) SPINE DATA MEASURING METHOD AND DEVICE AND STORAGE MEDIUM CN - 25.06.2021

Int.Class [A61B 5/107](#) Appl.No 202110577014.X Applicant BEIJING NOITOM TECHNOLOGY LTD. Inventor LI TILEI

The invention relates to a spine data measuring method and device and a storage medium. The measuring method comprises the following steps: responding to a zero returning instruction of the scoliosis measuring tool, acquiring a first angle of a node mounted on the scoliosis measuring tool, responding to a dotting instruction of the scoliosis measuring tool, acquiring a second angle of the node, determining the dotting frequency corresponding to the dotting instruction, and determining a dotting position corresponding to the second angle based on the dotting frequency; and based on the first angle and the second angle, determining spine data of the dotting position corresponding to the second angle. The inclination angle corresponding to the dotting position can be obtained in real time through the scoliosis measuring tool, the spine data of the current dotting position can be quickly and accurately determined through the first angle corresponding to the zero returning instruction of the scoliosis measuring tool and the second angle corresponding to the current dotting position on the spine., and the spine data can be quickly, simply and conveniently obtained while the accuracy of the measurement result is ensured.

112. [112842327](#) BODY POSTURE GENERATION METHOD AND DEVICE, ELECTRONIC EQUIPMENT AND MEDIUM CN - 28.05.2021

Int.Class [A61B 5/11](#) Appl.No 202110009061.4 Applicant BEIJING NOITOM TECHNOLOGY LTD. Inventor WANG KEWEI

The embodiment of the invention relates to the technical field of motion capture, and provides a body posture generation method and device, electronic equipment and a medium. The body posture generation method comprises the following steps: acquiring first posture data of lower limbs; determining second posture data of the upper limbs based on the first posture data and a posture mapping relation between the lower limbs and the upper limbs; and displaying the whole body posture of the human body model based on the first posture data and the second posture data. According to the technical scheme, the first posture data of the lower limbs are captured, and the second posture data of the upper limbs are determined based on the first posture data, so that the whole-body posture of the human body model is displayed, and the human body model is displayed more naturally.

113. [113259172](#) ATTITUDE DATA SENDING METHOD, ATTITUDE DATA OBTAINING METHOD, ATTITUDE DATA SENDING DEVICE, ATTITUDE DATA OBTAINING DEVICE, ELECTRONIC EQUIPMENT AND MEDIUM CN - 13.08.2021

Int.Class [H04L 12/24](#) Appl.No 202110617434.6 Applicant BEIJING NOITOM TECHNOLOGY LTD. Inventor WANG BIN

The embodiment of the invention discloses an attitude data sending method, an attitude data obtaining method, an attitude data sending device, an attitude data obtaining device, electronic equipment and a storage medium. The attitude data sending method comprises the following steps: determining an attitude hierarchy node range; and when the attitude hierarchy node range is switched from the whole to the local, sending attitude data based on hierarchy modeling matched with the local attitude hierarchy node range to a client, so that the client obtains attitude data of the target object based on the attitude data based on hierarchy modeling. According to the attitude data sending method provided by the embodiment of the invention, the bandwidth utilization rate between the sending end and the receiving end is improved, and the invalid occupation of the bandwidth is reduced.

114. [WO/2018/121708](#) WEARABLE MOTION CAPTURE APPARATUS AND VIRTUAL REALITY SYSTEM WO - 05.07.2018

Int.Class [G06F 3/01](#) Appl.No PCT/CN2017/119672 Applicant SHANGHAI NOITOM MOTION PICTURE TECHNOLOGY LTD Inventor LI, Longwei

A wearable motion capture apparatus includes a garment assembly, a mounting assembly, and functional components. The garment assembly is adaptively worn by a body of a wearer, and can provide a secure accommodation for each functional component via the mounting assembly. The mounting assembly is attached with the garment assembly, and is configured for securely mounting functional components to the garment assembly at mounting positions in contact with desired portions of the body. Each functional component, which includes an inertial sensor and optionally an active optical marker and is disposed between an inner layer and an outer layer of the garment assembly, is securely mounted to the garment assembly by means of the mounting assembly, and can collect or transmit a signal to thereby allow determination of a motion state of one corresponding portion of the body of the wearer.

115. [WO/2018/054338](#) MOTION CAPTURE APPARATUS AND SYSTEM WO - 29.03.2018

Int.Class [G06F 3/01](#) Appl.No PCT/CN2017/102793 Applicant SHANGHAI NOITOM MOTION PICTURE TECHNOLOGY LTD Inventor LI, Longwei



A motion capture system includes a motion capture apparatus, a plurality of optical sensors, and a computing device. The motion capture apparatus includes an optical marker portion and an inertial sensor portion, configured to respectively transmit lights and motion signals. Each optical sensor detects the lights from the motion capture apparatus, obtains optical signals, and sends the optical signals to the computing device. The computing device receives the motion signals and the optical signals, calculates a first set of motion parameters based on the optical signals and a second set of parameters based on the motion signals, and integrates the first set of motion parameters and the second set of motion parameters to thereby obtain a third set of motion parameters having an improved accuracy. The optical marker portion includes at least three optical markers arranged in a non-linear manner. Each optical marker can be an active optical marker.

116. [107844191](#) MOTION CAPTURING DEVICE USED FOR VIRTUAL REALITY

CN - 27.03.2018

Int.Class [G06F 3/01](#) Appl.No 201610908891.X Applicant BEIJING NOITOM TECHNOLOGY LTD. Inventor LI LONGWEI

One embodiment of the invention relates to a motion capturing device used for virtual reality. The device comprises: a housing body; at least one connection rod, wherein a first end of each connectionrod is in conduction with the inside of the housing body; and at least one optical marker, wherein each optical marker corresponds to one connection rod, is connected with a second end of the corresponding connection rod, and transmits optical information related to a spatial position of the motion capturing device. The housing body is also provided with: a pulse board, which is disposed inside the housing body, and converts externally input direct-current voltage into alternating-current voltage to supply power to the motion capturing device; an inertial sensor, which is fixedly disposed onthe pulse board, and collects motion information of the motion capturing device to enable a virtual-reality system to determine a spatial attitude of the motion capturing device; and an optical driving board, which is fixedly disposed on the pulse board, is electrically connected with the optical marker through a wire inside the connection rod, and drives the optical marker to emit light.

117. [WO/2016/033717](#) COMBINED MOTION CAPTURING SYSTEM

WO - 10.03.2016

Int.Class [G06F 3/01](#) Appl.No PCT/CN2014/085659 Applicant BEIJING NOITOM TECHNOLOGY LTD. Inventor DAI, Ruoli

A combined motion capturing system comprises multiple inertial sensor units [101], at least one communication unit [102], and a terminal processor [103]. The inertial sensor units [101] are connected to the communication unit [102]. The communication unit [102] is connected to the terminal processor [103]. The inertial sensor units [101] are mounted at positions of one or more motion capturing objects according to different combination modes, and measure motion information of the positions where the inertial sensor units [101] are mounted, and send the motion information to the communication unit [102]. The communication unit [102] receives the motion information output by inertial sensors, and sends the motion information to the terminal processor [103]. The terminal processor [103] acquires information about the motion capturing objects and mounting position information of the inertial sensor units [101], generates combination modes of the inertial sensor units [101] according to the information of the motion capturing objects and the mounting position information, receives the motion information sent by the communication unit [102], and processes the received motion information according to the combination modes to acquire complete postures and the motion information of the motion capturing objects. By freely combining the same set of motion capturing devices, different motion capturing objectives are achieved, and the cost is reduced.

118. [WO/2016/183812](#) MIXED MOTION CAPTURING SYSTEM AND METHOD

WO - 24.11.2016

Int.Class [G01P 15/18](#) Appl.No PCT/CN2015/079346 Applicant BEIJING NOITOM TECHNOLOGY LTD. Inventor DAI, Ruoli

A mixed motion capturing system and method. The mixed motion capturing system comprises at least one inertial sensor module [101], at least one optical marker [102], at least two optical cameras [103], and a reception processor [104]. The inertial sensor module [101] is connected to the reception processor [104], the optical cameras [103] are connected to the reception processor [104], and the inertial sensor module [101] and the optical marker [102] are installed on an object to be measured. The inertial sensor module [101] measures inertia information and space attitude information; the optical cameras [103] acquire image information of the optical marker [102]; the reception processor [104] generates inertia-based position information according to the inertia information and the space attitude information, generates optical marker point-based position information according to the image information, and integrates the inertia-based position information with the optical marker point-based position information, so as to generate position information of the object to be measured. The mixed motion capturing system combines advantages of optics-based motion capture and advantages of inertia-based motion capture, and can avoid disadvantages of the two motion capturing modes at the same.

119. [WO/2015/109442](#) MULTI-NODE MOTION MEASUREMENT AND ANALYSIS SYSTEM

WO - 30.07.2015

Int.Class [G01C 23/00](#) Appl.No PCT/CN2014/071006 Applicant BEIJING NOITOM TECHNOLOGY LTD. Inventor LIU, Haoyang

A multi-node motion measurement and analysis system comprises at least one motion measurement module [101, 102] and a receiver unit [103]. The motion measurement module [101, 102] is bound to handheld sports equipment [100] through an adjustable clamp, or is bound to human body [200], and the binding position on the human body is redistributed according to different measurement requirements. The motion measurement module [101, 102] comprises a sensor module [104] for measuring motion acceleration, angular velocity and magnetic force information, a first microprocessor module [105] connected with the sensor module [104] and used for generating azimuth information, and a first RF module [106] for receiving the acceleration, the angular velocity, the magnetic force and the azimuth information and sending the same to the receiver unit [103]. The receiver unit [103] generates motion information according to the acceleration, the angular velocity, the magnetic force information and the azimuth information and calibrates the motion measurement module [101, 102] when the motion measurement module [101, 102] is bound to different positions on the human body [200]. The positions and the number of the motion measurement module [101, 102] can be set flexibly according to actual requirements, so that various measurement requirements are achieved and meanwhile cost is reduced.

