

# Puttingstudio

## User Manual

V1.0.1

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### Version Description

Version	Description	Revision date	Reviser
V1.0.0	First Edition	2026-04-09	Lu Xinyuan
V1.0.1	1. Chapter 2.3 adds a schematic diagram of system network interaction; 2. Remove the introduction of itrack connection to wireless hotspots and add an introduction to the connection of wireless hotspots for biomechanical sensors; 3. Correction of other relevant typos.	2026-04-13	Lu Xinyuan

## PuttingStudio User Manual

PuttingStudio sets the benchmark for high-performance golf putting studios, transforming your putting green into the ultimate environment for instruction and training. It effectively helps you master putting direction and speed, enhance your green-reading skills, and gain a deeper understanding of the interplay between pace and line in the putting process. Through interactive training drills projected directly onto the green, you can challenge yourself or compete against others in engaging games. PuttingStudio offers a virtually limitless array of practice options.



Figure 1

PuttingStudio seamlessly integrates a variety of technologies to deliver an unparalleled putting training experience. Its features include an interactive "Smart Green" powered by AR (Augmented Reality), as well as a machine-vision-based system for tracking and analyzing ball trajectory. Furthermore, it offers comprehensive putting analytics—providing precise, detailed data on your strokes to help you quickly pinpoint the root causes of any issues. By delivering intuitive feedback in multiple formats—including video, images, data metrics, and trajectory

curves—PuttingStudio leverages these advanced technological tools to analyze and refine a golfer's putting mechanics, enabling you to conduct both instruction and practice within a fully integrated, closed-loop environment.

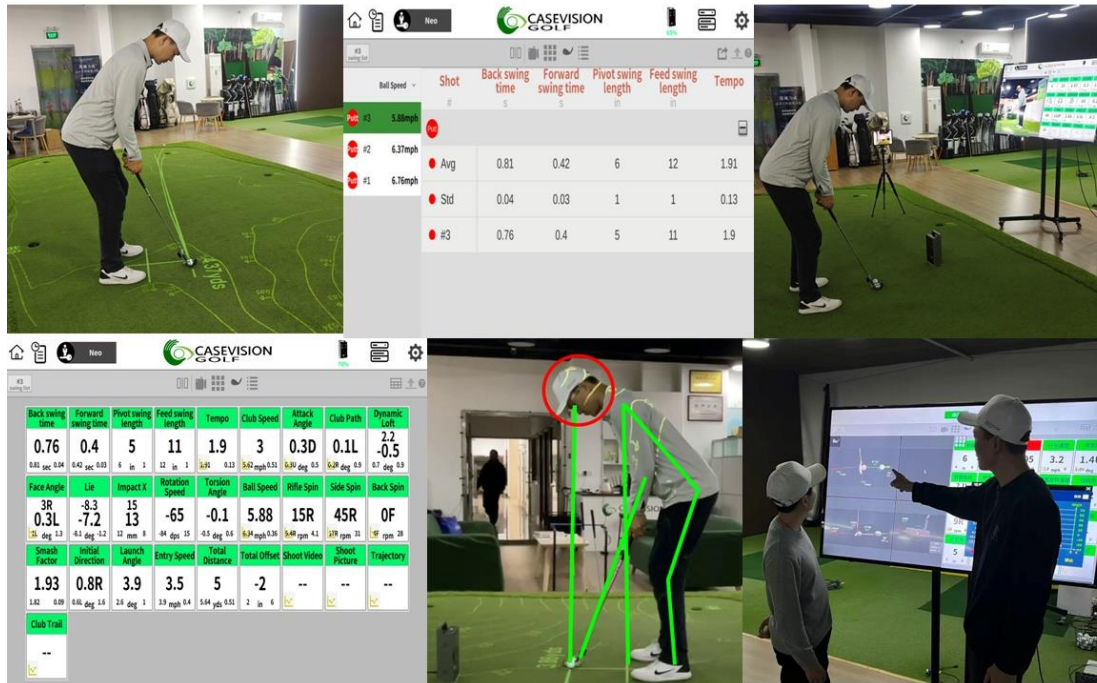


Figure 2

## 1. System composition

The PuttingStudio consists of an interactive smart putting green system comprising a green, an iPad, a computer, a projector, and a camera. This system is capable of displaying the green's topography, suggesting putting lines, and visualizing the actual rolling path of the ball, among other functions. It facilitates various engaging interactive games designed to help users improve their putting technique. Centered around the iTrack system for data acquisition, it enables the precise measurement of putting rhythm, clubhead and clubface metrics, and ball data.

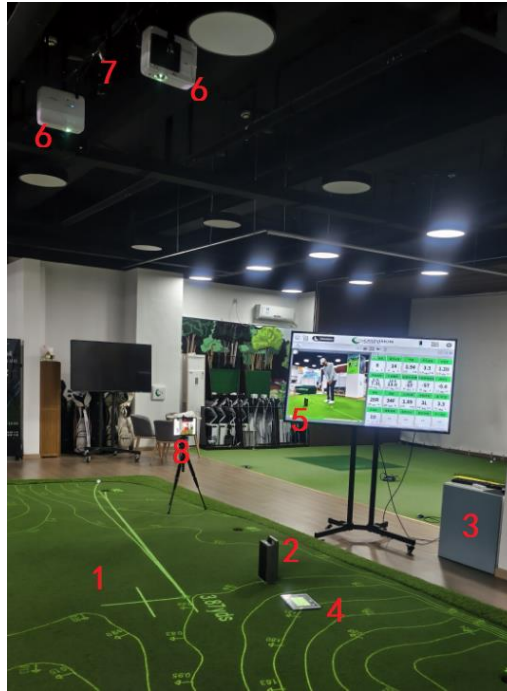


Figure3 system composition

- (1) Putting Green: Available in two configurations—flat and level, or flat with a slight incline ( $\leq 3\%$ );
- (2) iTrack: Detects data regarding both the ball and the putter head;
- (3) Computer: The central processing and display hub;
- (4) iPad: Facilitates human-computer interaction and can also serve as the camera for capturing putting stroke mechanics;
- (5) Monitor: Displays test data, putting stroke videos, and other relevant information;
- (6) Projector: Projects visual information onto the putting green surface;
- (7) Ball Tracking Camera: Detects the ball's position and tracks its movement;
- (8) Putting Stroke Camera (iPad compatible): Captures the mechanics of the putting stroke.

## 2. Prepare

### 2.1 Download the APP

- (1) Search for "iPutt" in the app store on the human-computer interaction ipad or scan the QR code, download and install it, as shown in Figure 4;

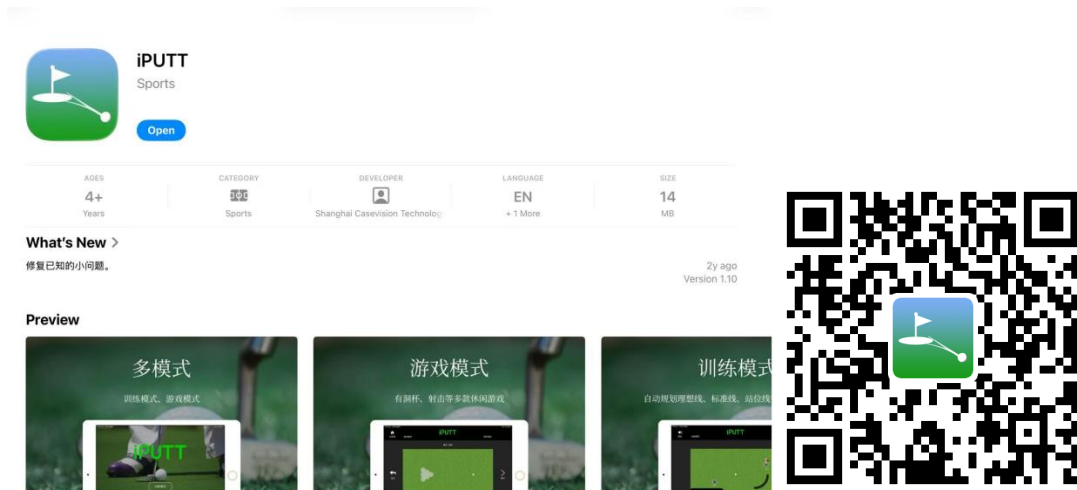


Figure4 Download the iPutt app

(2) If you need to watch the putting stroke mechanics, you should use another iPhone or iPad and search for "CasevisionCamera" on the Apple app store, download and install it.

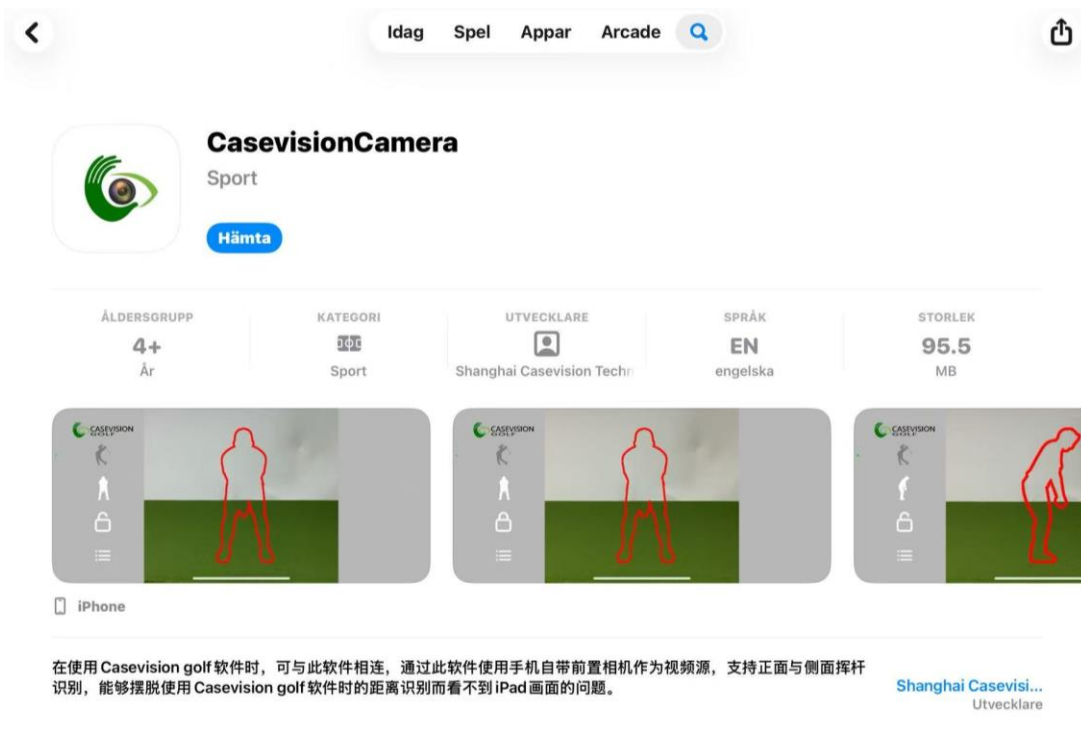


Figure 5 Download the CasevisionCamera app

## 2.2 Login and Registration

Double-click the PuttingStudio app on the computer screen to run it, and the registration and login interface will be displayed.

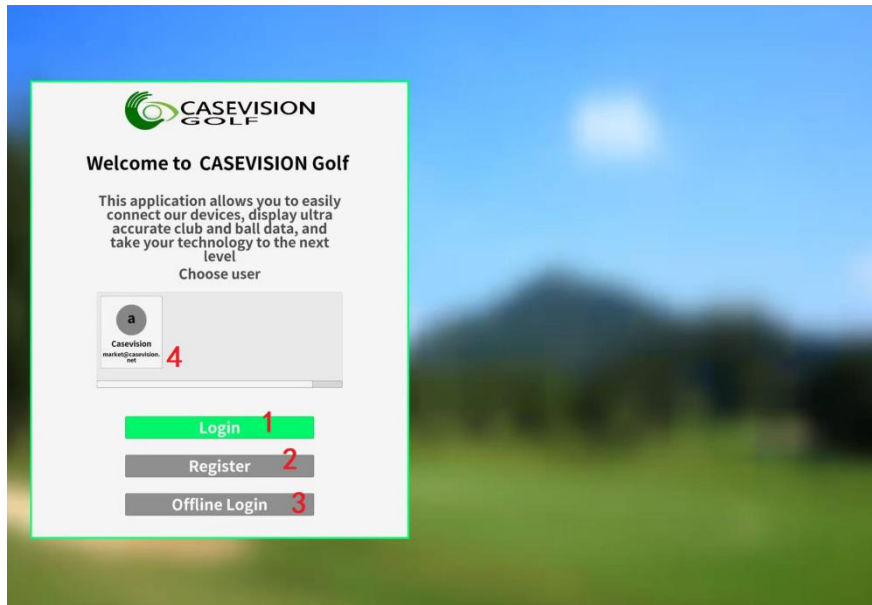


Figure 6 Registration and login interface

- (1) Login button: Clicking the login button will lead you to the login interface ;
- (2) Registration button: Clicking the registration button will lead you to the registration interface ;
- (3) Offline login interface: Offline mode refers to the absence of an Internet connection. Clicking on the offline login interface will enter the APP in offline mode. In offline mode, except for the player management icon which cannot be operated and the user information function in the Settings window being different, all other functions are the same as those in online mode;
- (4) User List: The interface will list users who have logged in before. After selecting a user, you can log in without a password.

Click "Log in" to display the following interface:

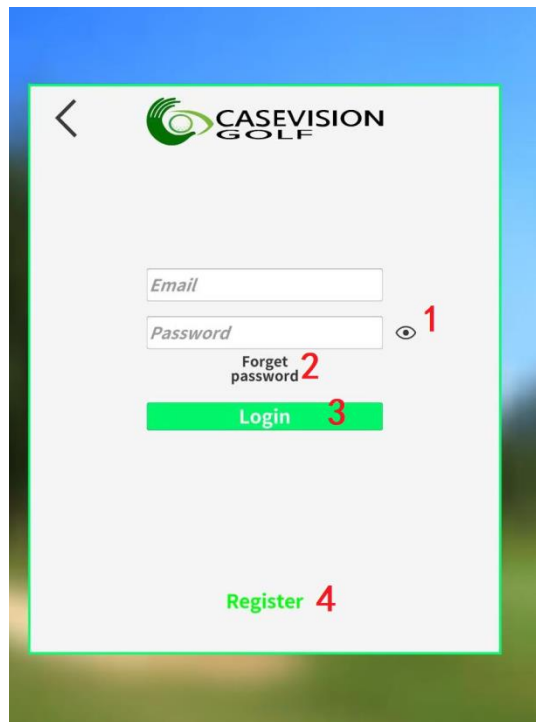


Figure 7 Login interface

- (1) Show password: Click the "Show Password" icon to display the password;
- (2) Forgot password: Click "Forgot Password" to enter the password reset interface;
- (3) Login Button: After entering your email and password, click the login button to access the APP;
- (4) Registration button: Clicking it will redirect you to the registration interface.

Click to register: Click the registration button to enter the registration interface:

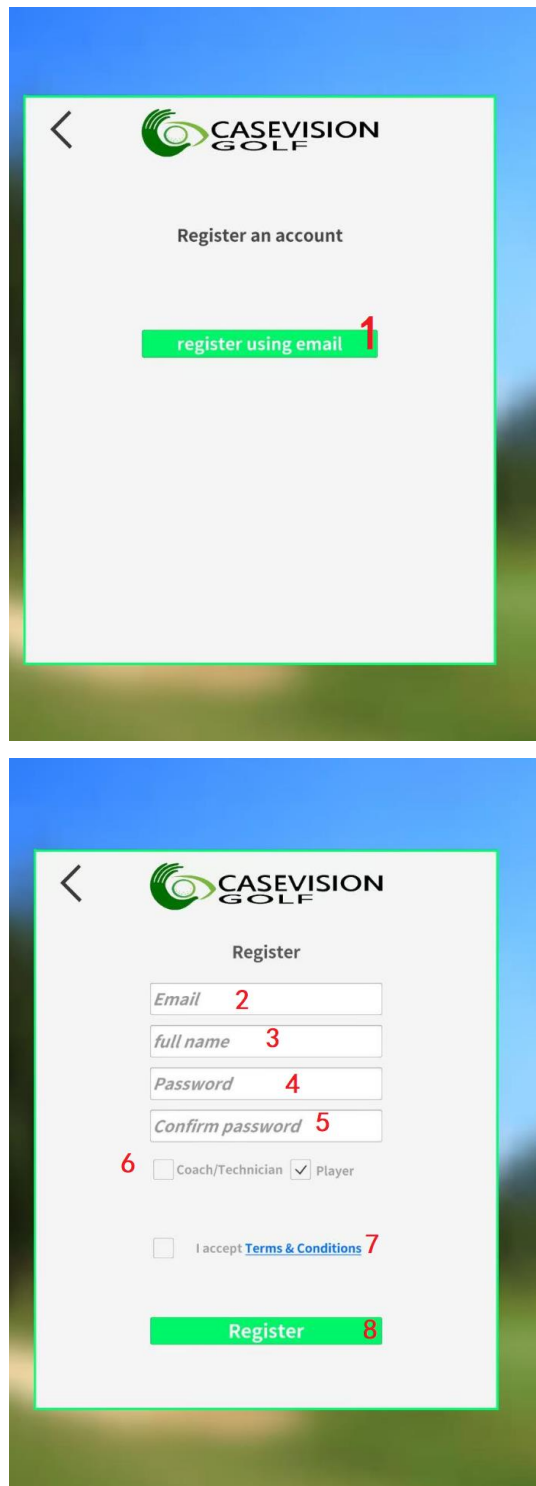


Figure 8 Registration interface (top)

Select the registration method (bottom) Registration interface

- (1) Email registration: Click to register a new user via email;
- (2) Email filling: Register by filling in your email address. The same email address cannot be registered repeatedly;
- (3) User name filling: Fill in the user name. The same user name cannot be

registered repeatedly;

- (4) Password filling: Set the password;
- (5) Confirm password filling: Confirm the password a second time;
- (6) Identity selection: Choose the identity of coach or player;
- (7) Confirmation Clause: Check the confirmation clause;
- (8) Confirm Registration: After clicking, a confirmation email will be sent to your email address. Once confirmed, you can log in.

Click to log in offline

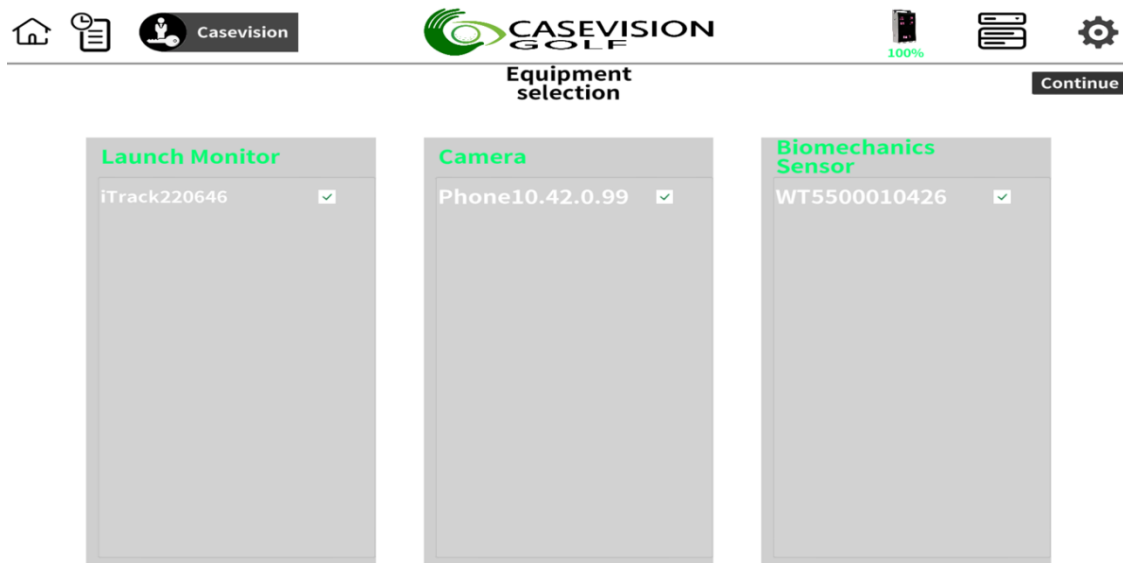


Figure 9 shows the interface for selecting peripheral devices in offline mode

### 2.3 Network Settings for system-related equipment

The system network interaction is shown in the following figure.

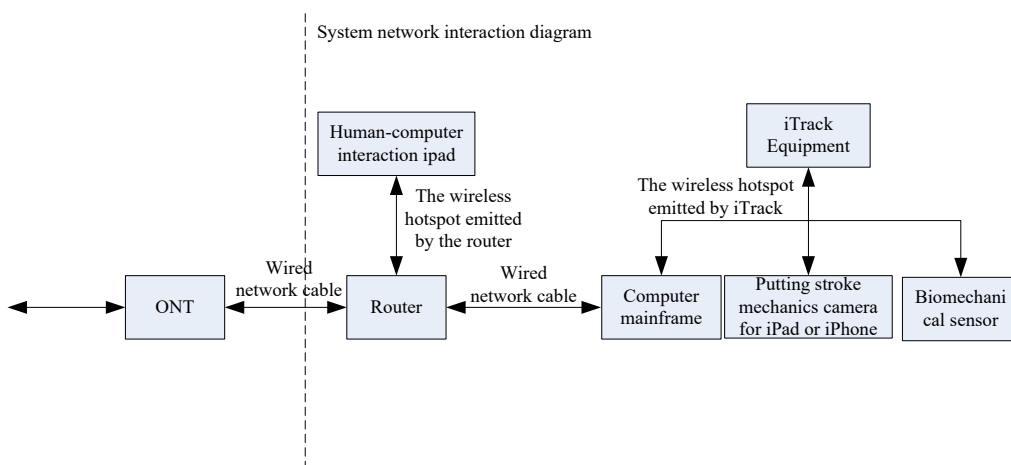


Figure 10 Schematic diagram of system network interaction

- (1) prepare two network cables of appropriate length. One should be connected to the optical modem to the router, and the other to the router to the computer host (both the router and the computer network have been configured at the factory, so users do not need to configure them again).
- (2) iTrack itself has a WIFI hotspot function. Connect your computer's WIFI to the WIFI hotspot of iTrack as shown in the following figure (default password: 12345678).

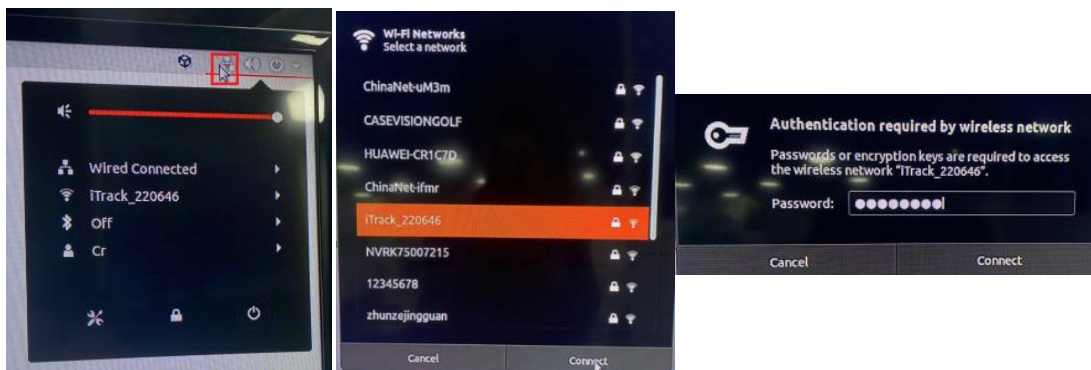


Figure 11: The computer is connected to the iTrack hotspot

- (3) Connect the wireless local area network of the human-computer interaction ipad to the router network;

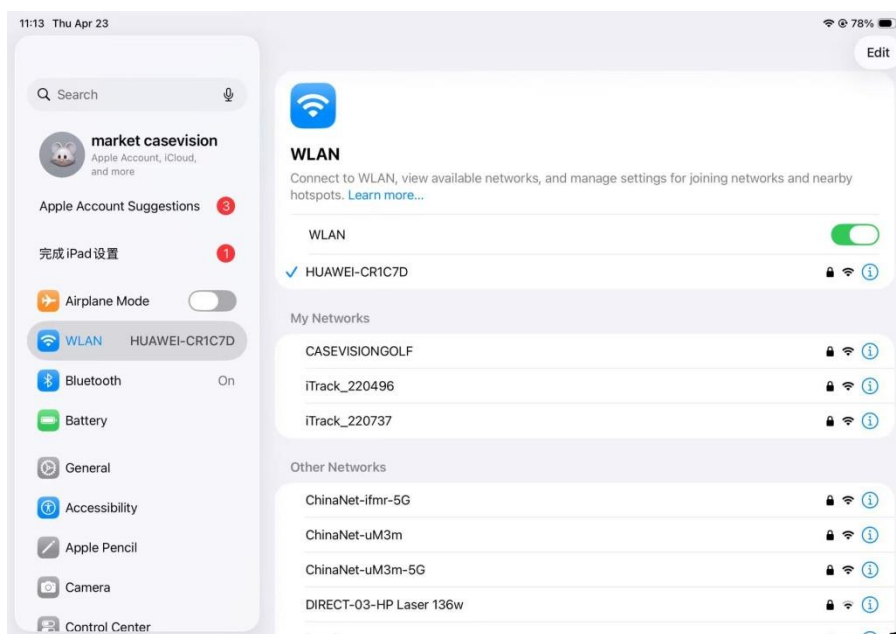


Figure 12 Human-computer interaction: ipad connected to the router network

- (4) Connect the wireless local area network of the putting stroke camera iPad or iPhone to the WIFI hotspot of itrack.

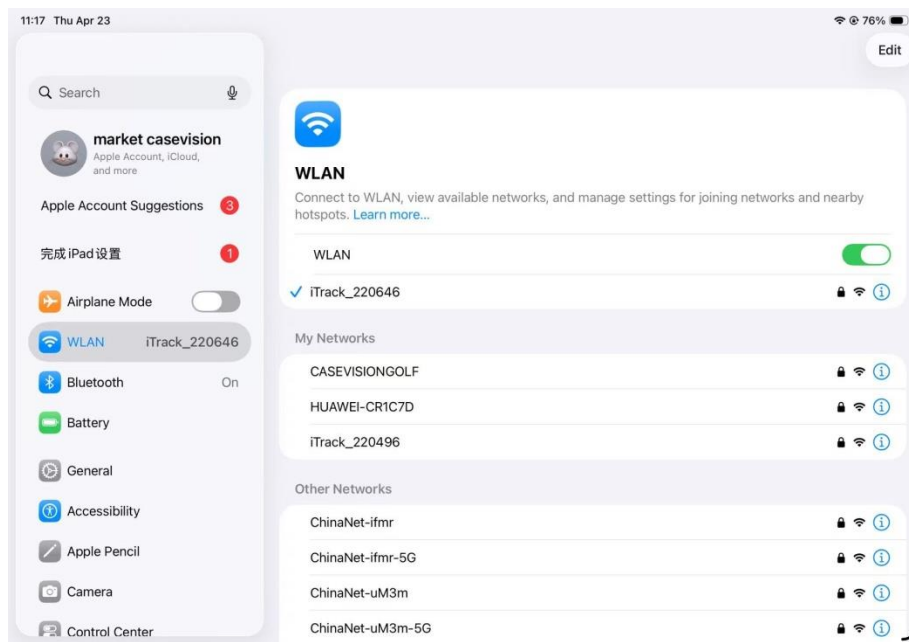


Figure 13: The putting stroke camera ipad is connected to the iTrack hotspot

- (5) The biomechanical sensor is already configured at the factory and no further configuration is required. It will automatically connect to the iTrack hotspot upon startup.

## 2.4 Prepare other related equipment

### (1) Placement of the putting stroke mechanics camera

The putting stroke mechanics camera can be used with an iphone or ipad. By adjusting the distance and height of the tripod, the player's position can be fully captured in the frame.



Figure 14: Position of the putting

(2) Placement of biomechanical sensors

The position of the biomechanical sensor clamp is shown in the following figure. Ensure that the blue power indicator light of the biomechanical sensor faces the handle and that the clamp is basically perpendicular to the club surface.



Figure 15: Placement of biomechanical sensors

(3) Paste the marking points of the putter

Four marking points need to be affixed to the head of the putter and the putter body: ① and ② are two marking points on the neck of the putter head, and ③ and ④ are two marking points on the head of the putter. These four marking points, in principle, represent the plane of the putter. Therefore, these four marking points

should be pasted on the same plane as much as possible. Among them, the distance between ① and ② by 2 marker points, and the distance between ③ and ④ by 1 marker point.



Figure 16 The marking points of the putter are pasted

### (3) Ball marking points

To more accurately detect the putting data, a marking ball needs to be used. A non-reflective marking pen can be used to randomly draw some circular marks on the ball. The diameter of the marking circle is approximately 5mm. The positions of all marking circles should be randomly and evenly distributed, without symmetrical or regular distribution. There must be at least 3 marking points. When there are 3 marking points, it cannot be an equilateral triangle; when there are 4 marking points, it cannot be a square. When using fewer marker points, the marker points should be directed towards iTrack.



Figure 17 Ball marking points

## 2.5 Equipment selection

After a successful login, you will enter the device selection interface. By

launch monitor, camera and biomechanical sensor, search for and display the devices, cameras and biomechanical sensors connected to the iTrack device WiFi.

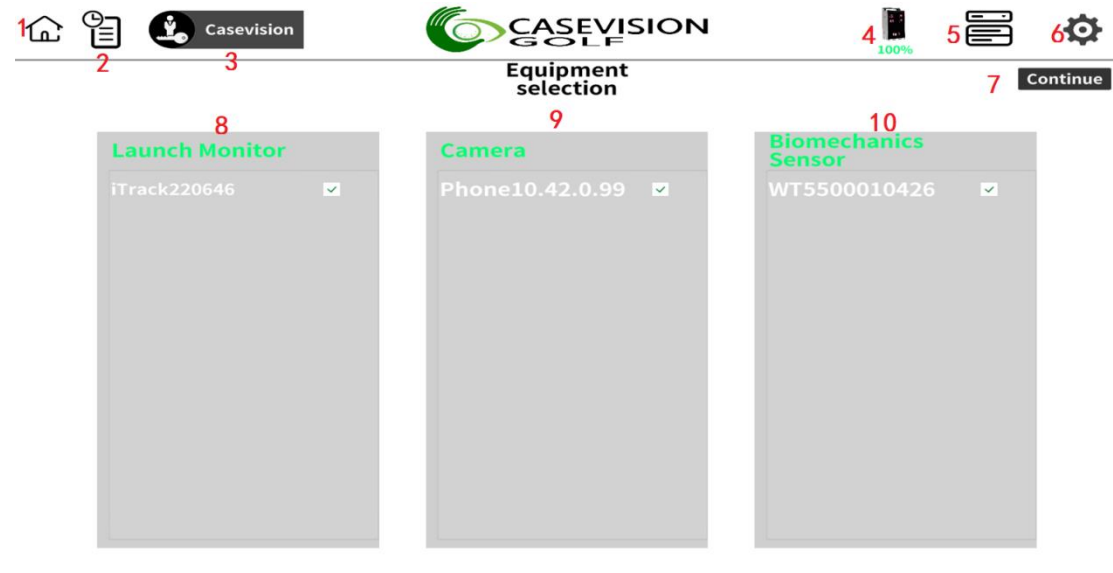


Figure 18 Peripheral selection interface

The main icons and key descriptions in the peripheral selection interface are as follows:

Table 2-5-1

Location	icons	description	Location	icons	description	Location	icons	description
1		Quit training	2		Historical data	3		Golfer management
4		Peripheral parameters	5		Peripheral selection	6		Settings Management
7		continue						


- (1) Exit Training icon: Clicking this icon in the training interface will exit the training and return to the previous interface. It is invalid in other interfaces.
- (2) Historical Data icon: Clicking on it will open the historical data window to view local or cloud historical data.
- (3) Player Management icon: Clicking on it will open the player

management window, providing operations such as creating, searching, following, and modifying players, offering coaches the ability to manage trainees. This feature is not available in the peripheral selection interface or in the convenient mode.

- (4) Peripheral parameter icon: It is displayed after selecting the iTrack device in the launch monitor bar. Clicking it will open the peripheral parameter window, where you can view the device parameter information. It provides various operations such as device calibration, atmospheric pressure setting (only available in swing mode), device mode switching, and WiFi configuration (only available in offline mode).
- (5) Peripheral selection icon: Clicking on it will enter the peripheral selection interface, which is only valid during the main training interface.
- (6) Set management icon: Clicking on it will open the Settings window, providing language, unit, user information, software information, and various operations for cloud management.
- (7) Continue pressing the button: After selecting the iTrack device in the launch monitor bar, click this button to enter the main training interface.
- (8) Launch Monitor bar: When an iPad or iPhone is connected to the WiFi of an iTrack device, the launch monitor bar displays the iTrack device.
- (9) Camera bar: When CaseVisionCamera is online, it can be displayed in the bar. After checking the box, it will be used as the video capture source.
- (10) Biomechanical sensor column: When there is a Bluetooth gyroscope online in the clubhead mode, it can be displayed in the column. After checking the box, the clubhead rhythm data can be measured.

## 2.6 Peripheral parameters

After selecting the iTrack device in the launch monitor bar, it will be

displayed. Click the peripheral parameter icon  to open the peripheral parameter window.

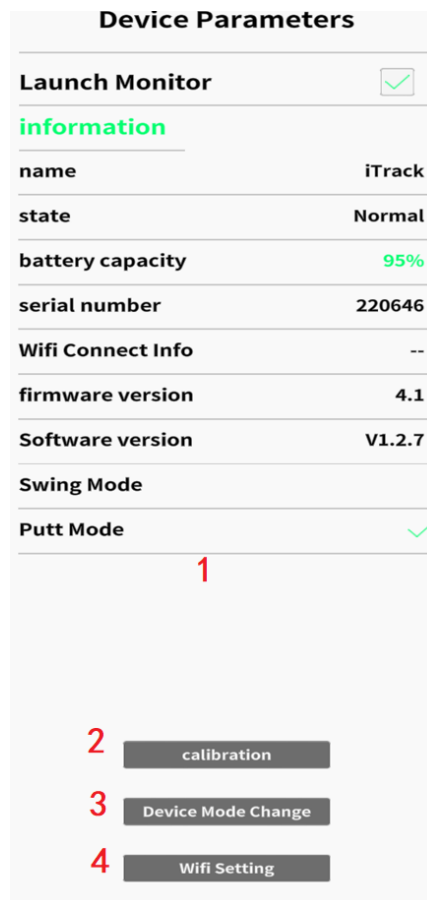


Figure 19 Peripheral parameter window

- (1) Device Information: You can view various device information, WiFi status, and the mode it belongs to.
- (2) Calibration: Clicking will lead you to the calibration interface. For details, please refer to Section 1.5.
- (3) Equipment mode switching: Here, it needs to be set to putt mode.
- (4) WiFi configuration: The default configuration is fine here and no configuration is required.

## 2.7 Equipment calibration

Each time the iTrack is repositioned, the Angle should be adjusted to determine the target direction the device is pointing to.

Click the calibration button in the peripheral parameters window. First,

calibrate the Angle and then the zero position. Switch the calibration mode by clicking "Angle" and "Zero Position" in the upper left corner.

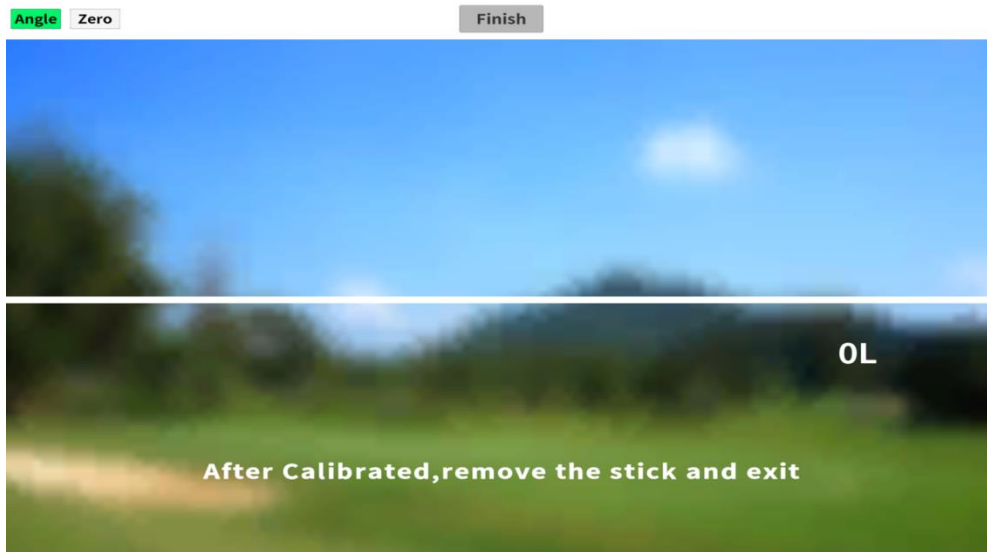


Figure 20 Angle calibration interface

In the Angle calibration window, after placing the calibration club, the Angle data will be prompted at the bottom of the interface. After adjusting the device Angle, click "Finish" to close the calibration interface.

Zero-position calibration must be carried out; otherwise, the equipment will lack reference values for the club surface pointing Angle, reclining Angle, dynamic inclination Angle, and impact point position.

In the zero position calibration window, align the ball with the marked point with the device and place it in the ball inspection area. After setting the putting in the zero position and stabilizing it for a few seconds, the window will prompt the zero position data. Click "Finish" to close the calibration window. When the zero calibration is completed, a prompt window asking "Do you want to save the calibration data?" will pop up. If you click "Cancel", this calibration will be invalidated and the data from the previous calibration will be inherited. Click "Confirm" to save the calibration data of this time. The calibration data of this time shall prevail.



Figure 21 Zero position calibration interface

## 2.8 Convenient mode login

Click "Settings Management", then click "Software Information", and then select "Convinient Mode". After checking the box, restart the PuttingStudio APP to enter convinient mode. From now on, every time the APP is run, it will automatically connect.

Software Information	
Soft Version	V1.0.0
Software subscription	--/--/--
Convenient Mode	<input checked="" type="checkbox"/>

Figure 22 Convinient Mode Settings

In convinient mode, there is no need to log in when entering the PuttingStudio APP. You can directly enter the APP, and the peripheral selection interface will change to the device search interface. When the computer is not connected to the WiFi of the iTrack device, the peripheral search interface shows that it is not connected. After the computer is connected to the WiFi of the iTrack device, the peripheral search interface shows that it is connected. Click "Continue" to directly enter the training interface.

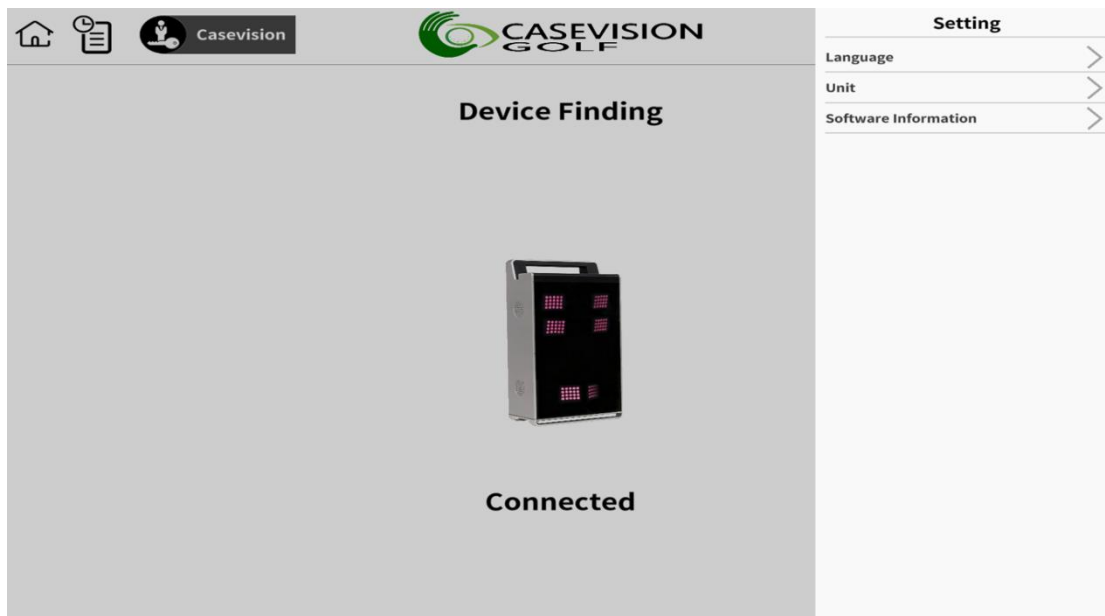




Connected

Figure 23 Peripheral search interface

In convenient mode, the Settings window has no user information or cloud management Settings, and only local historical data is retained in the historical data window.



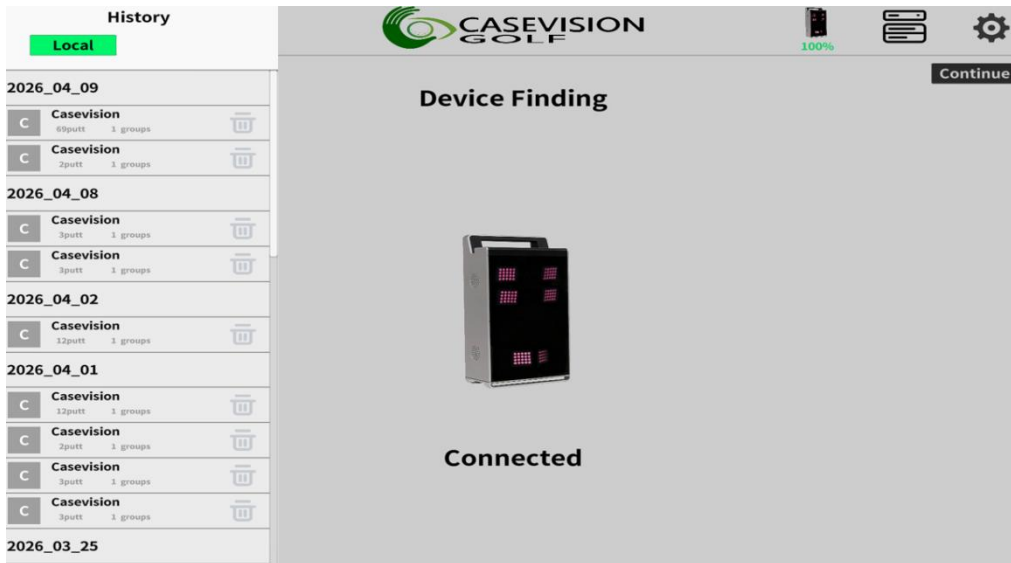


Figure 24 Convinient Mode Settings and History

### 3. Enter the training

Click on the large training icon in the main training interface to start this training course.



Figure 25 Training Main interface

#### 3.1 Select the player

When entering training as a coach, it prompts that players need to be selected. By switching between the three filtering conditions of "Recently", "Attention", and "All", find the player who is undergoing this training. Click on the player's icon to enter the training interface.

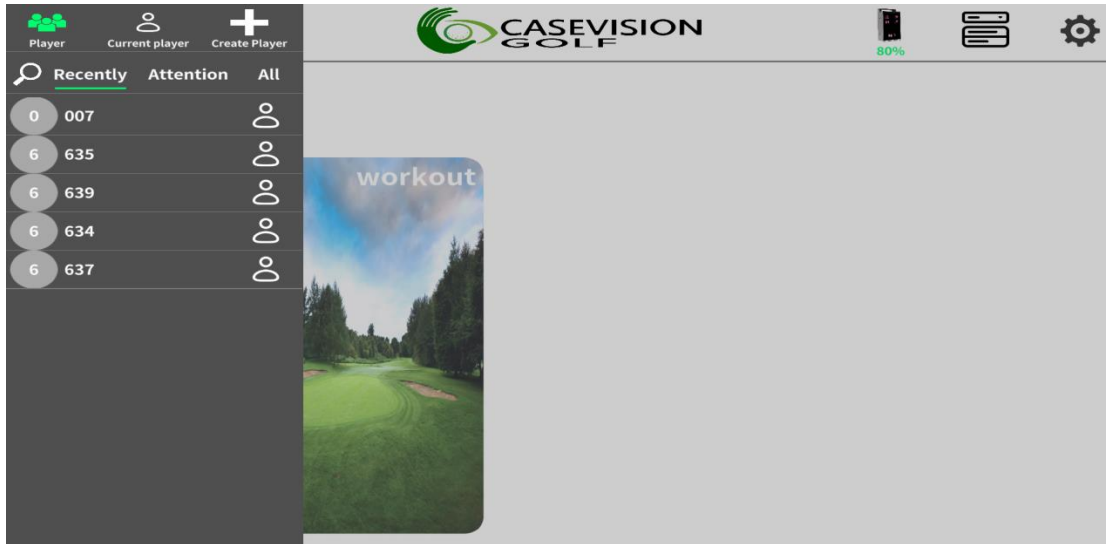


Figure 26 Player selection interface

When entering training as a player, it is assumed that the player for this training is yourself. Skip the selection of players and directly enter the training interface.

### 3.2 Training interface

The training interface display varies depending on the iTrack device mode. Figure 27 shows putting training.

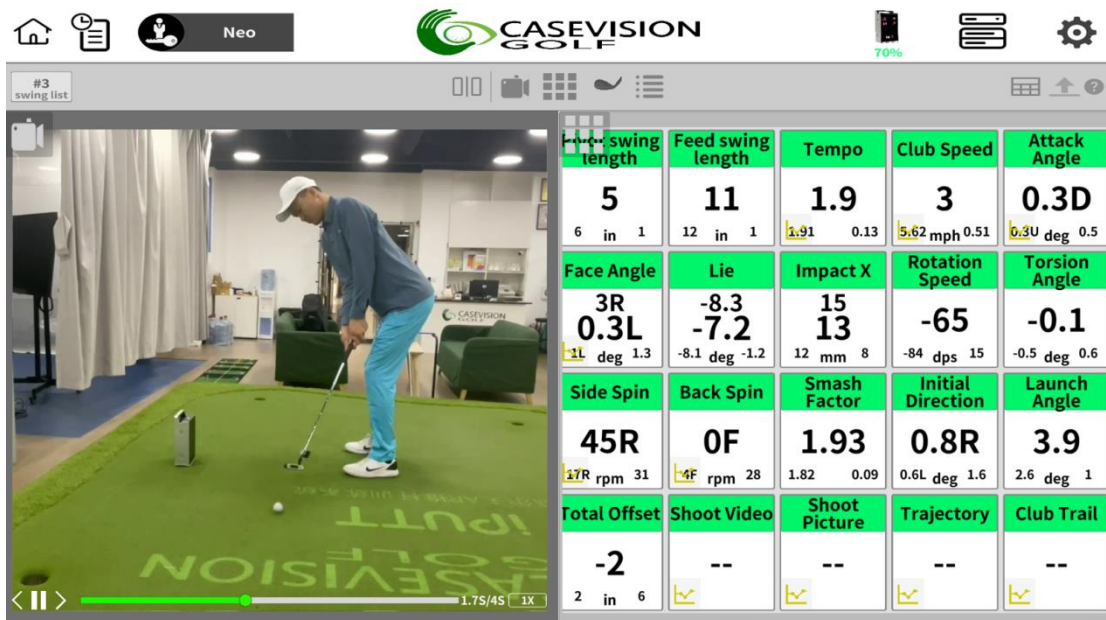












Figure 27 Putting training interface

The main icons and key descriptions in the training interface are as follows.

Table 3-2-1

Location	icons	description	Location	icons	description	Location	icons	description
1		putting list	2		Window splitting	3		Image view
4		Data Signage view	5		clubface data view	6		Statistical View
7		Share	8		Select the displayed data	9		Manually upload data to the cloud
10		Data definition						




- (1) putting list icon: The putting list can be turned on or off.
- (2) Window splitting: Split the screen into two Windows, left and right. The view scenes of the two Windows can be switched freely, but they cannot be switched to the same scene.
- (3) Image View icon: The swing image is displayed in a full window.
- (4) Data Signage view icon: Clicking on it will display the view area as a single data signage view.
- (5) clubface view icon: Clicking on it will display the view area as a single clubface data schematic view.
- (6) Statistical View icon: Clicking on it will display the view area as a single statistical list view.
- (7) Send and Share icon: It is displayed when there is a statistical view scene. Clicking on it will lead to the data statistics interface, and the training data of this time can be sent to the destination email via email.
- (8) Select the displayed data: After clicking, the data display selection window will open, allowing you to set the data display in the data bottom bar and within the sign view.
- (9) Manual Upload to Cloud icon: When automatic upload is not selected in the cloud management of the Settings window, click this icon to upload the selected shot to the cloud.

(10) Data Definition Icon: This is a help file. Clicking on it will display the data definition for detection.

## 4. Introduction to the putting Function

### 4.1 Comprehensive putting data analysis

The iTrack capture the following putting metrics: Rhythm data (up time, down time, putting stroke length, rhythm), clubhead data (club speed, attack Angle, club path), clubface data (dynamic loft, face angle, lie Angle, impact point, rotation, torsion angle before and after impact), ball launch data (ball speed, rotation, smash factor, initial direction, launch Angle). On the greens with the set putting conditions (the distance between the ball and the cup, the green speed), calculate the movement trajectory data of the ball (the speed distance into the hole, the total distance, the total offset), and provide dynamic video and trajectory images of the impact process.

These data will be directly presented in the sign view , and at the same time, 3D data of the clubhead and clubface will be displayed in the clubface view . Statistical values will be provided in the statistical view  and can be shared via email.

#### 4.1.1 Impact detection zone

Place the ball in the ball impact detection zone in front of the iTrack device, and a ball detection prompt box will pop up on the training interface.

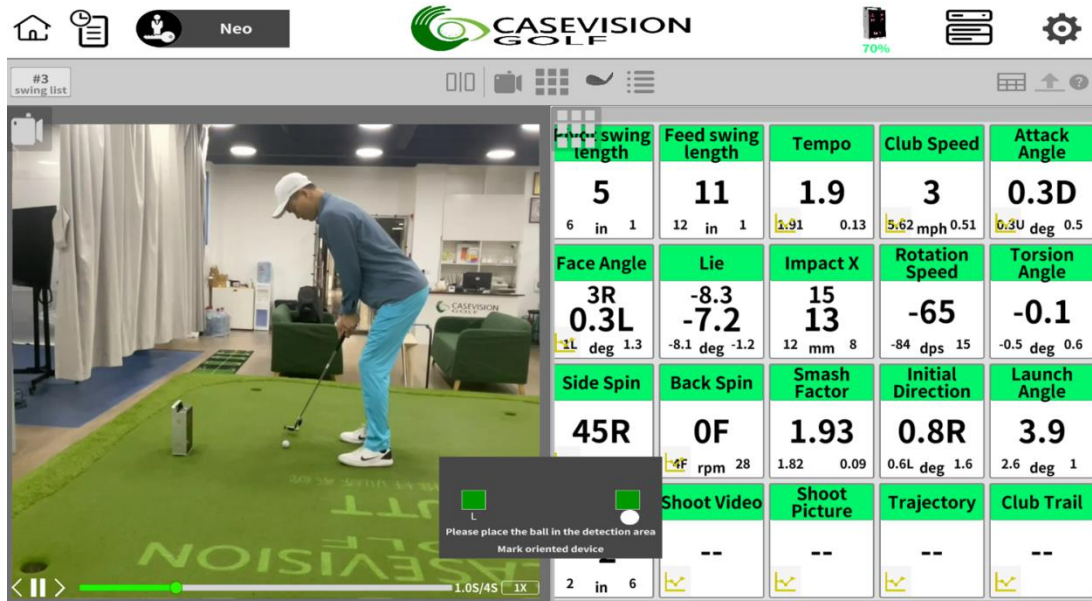


Figure 28 Inspection area in putting mode

When the ball is locked within the green detection zone, a voice playback is triggered to prompt the player to get ready to hit the ball. After one putting, the hit count increases, and the training interface automatically triggers the refresh display of video and data. Click the icon #3 swing list (putting List) to trigger the expansion or collapse of the list window. When expanding the list, select previous hit records to review the video and data.


#### 4. 1. 2 Image view

The image view can present the video of this putting, and the progress of the image can be controlled, paused, and the playback speed adjusted.



Figure 29 View of the putting image

#### 4. 1. 3 Data Signage view

Click the data setting icon  to customize personalized data filtering effects. When there is a large amount of data, you can swipe left or right in the sign view or the data bottom bar.

Back swing time	Forward swing time	Pivot swing length	Feed swing length	Tempo	Club Speed
0.76 0.81 sec 0.04	0.4 0.42 sec 0.03	5 6 in 1	11 12 in 1	1.9 1.91 0.13	3 5.62 mph 0.51
Face Angle	Lie	Impact X	Rotation Speed	Torsion Angle	Ball Speed
3R 0.3L 1.1 deg 1.3	-8.3 -7.2 -8.1 deg -1.2	15 13 12 mm 8	-65 -84 dps 15	-0.1 -0.5 deg 0.6	5.88 6.34 mph 0.36
Smash Factor	Initial Direction	Launch Angle	Entry Speed	Total Distance	Total Offset
1.93 1.82 0.09	0.8R 0.6L deg 1.6	3.9 2.6 deg 1	3.5 3.9 m	5	-2
Club Trail	--				

**Face Angle**

Face\_To\_Path  Face\_To\_Target

Select All

**Tempo**

Back swing time  Forward swing time

Pivot swing length  Feed swing length

Tempo

**Club Head**

Club Speed  Attack Angle

Please place the ball in the detection area  
Mark oriented device

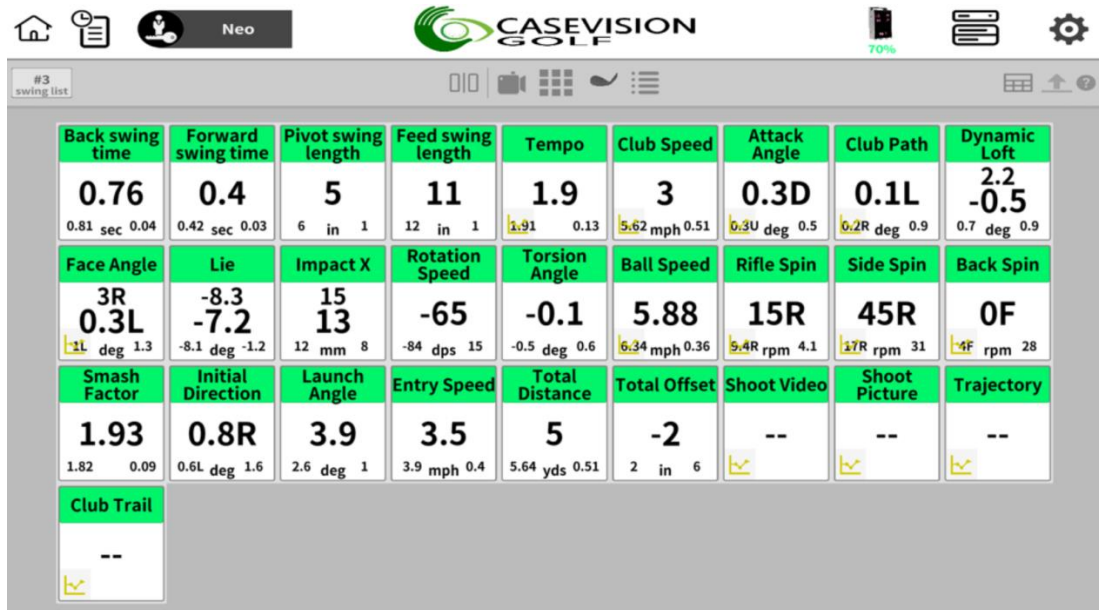


Figure 30 putting sign

(1) Double-click the "Tempo" sign with the process data icon, and a floating window will pop up to display the rhythm curve of this putt.



Figure 31 Putting rhythm curve

(2) Double-click the "Club Speed" sign with the process data icon, and a floating window will pop up to display the club speed curve of this putt.

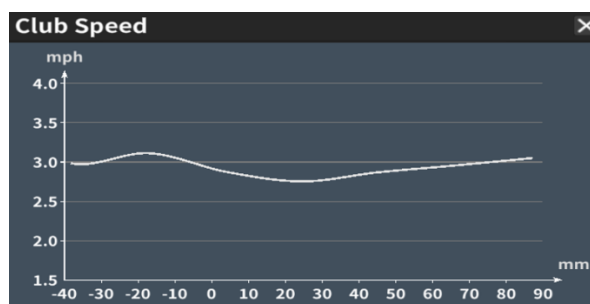



Figure 32 clubhead sped curve

(3) Double-click the "Attack Angle" sign with the process data icon , and a floating window will pop up to display the attack Angle curve of this putt.

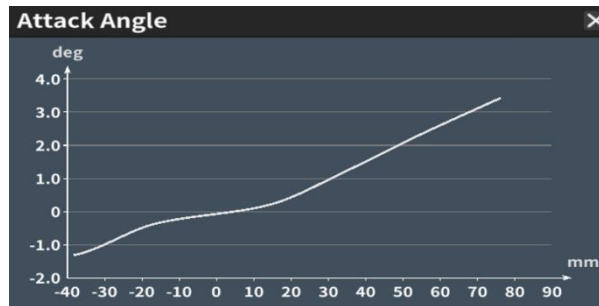



Figure 33 Attack Angle curve

(4) Double-click the "Club Path" sign with the process data icon , to pop up a floating window displaying the club path curve of this putt.

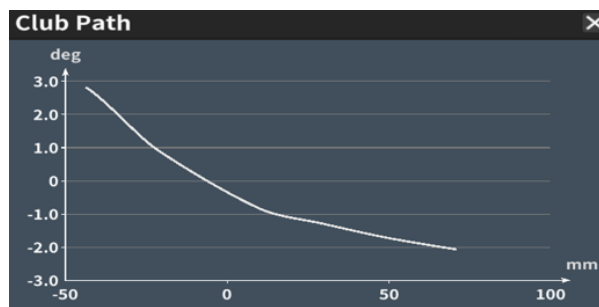



Figure 34 club path curve

(5) Double-click the "Face Angle" sign with the process data icon , and a floating window will pop up to display the face angle curve of this putt.

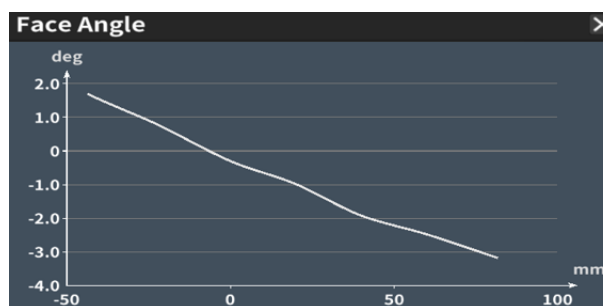



Figure 35 shows the direction curve of the bar surface

(6) Double-click the "Ball Speed" sign with the process data icon , and a

floating window will pop up to display the ball speed curve of this putt.

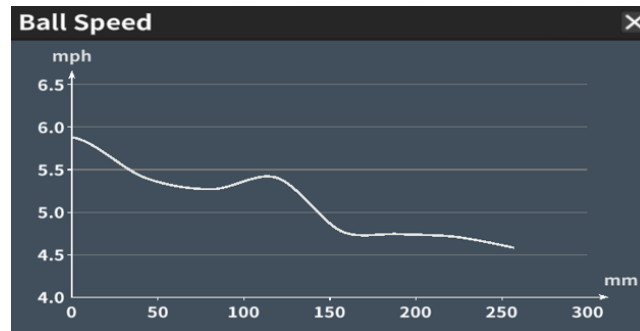



Figure 36 Ball speed curve

(7) Double-click the "Rifle Spin" sign with the process data icon , and a floating window will pop up to display the rifle spin curve of this putt.

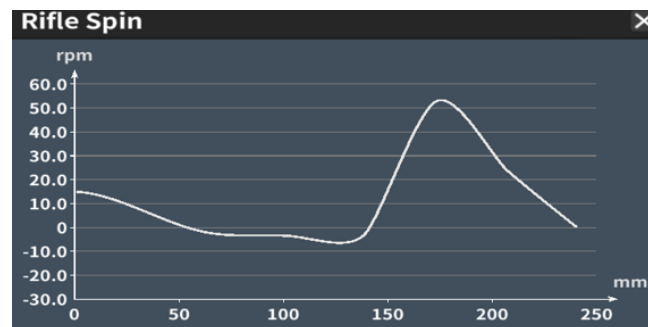



Figure 37 Ball Rifle spin curve

(8) Double-click the "Side Spin" sign with the process data icon , and a floating window will pop up to display the side spin curve of this putt.

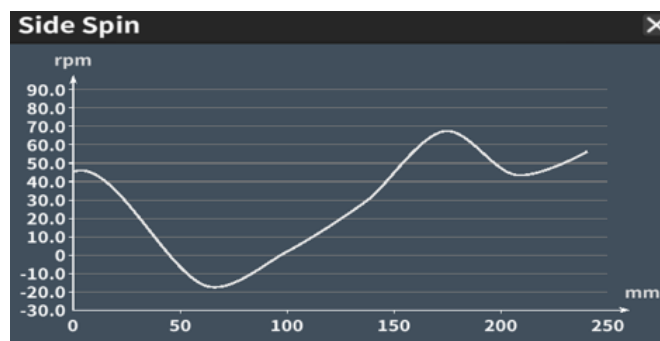



Figure 38 Ball side spin curve

(9) Double-click the "Back Spin" sign with the process data icon , and a floating window will pop up to display the back spin curve of this putt.

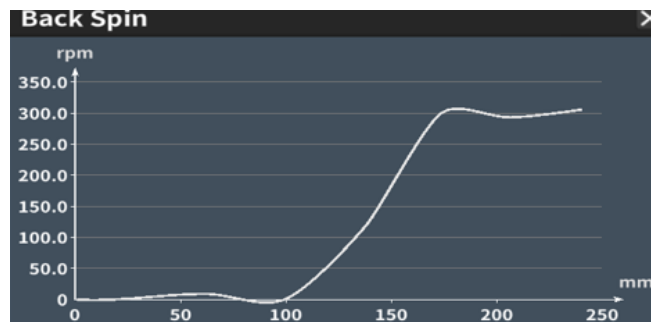



Figure 39 Back spin curve

(10) Double-click the "Shoot Video" sign with the process data icon , and a floating window will pop up to display the shoot video of this putt.

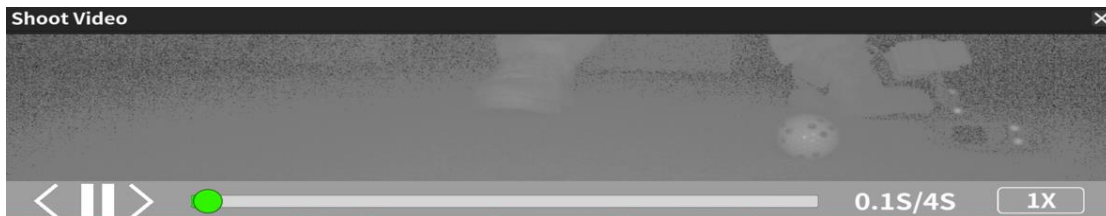



Figure 40 Ball shoot video

(11) Double-click the "Launch Image" sign with the process data icon , and a floating window will pop up to display the launch image of this putt.

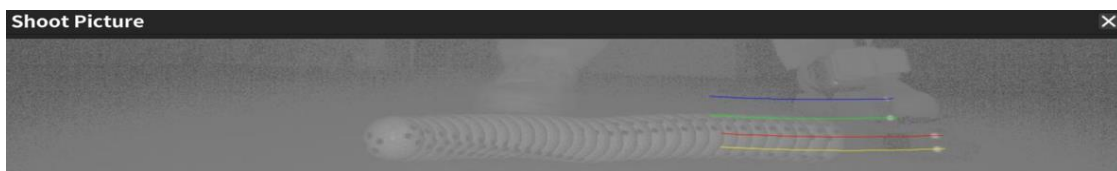


Figure 41 Launch image

(12) Double-click the "Trajectory" sign with the process data icon to pop up a floating window showing the trajectory of the ball on the green. The distance between the parameter ball and the hole cup and the green speed can be set manually.

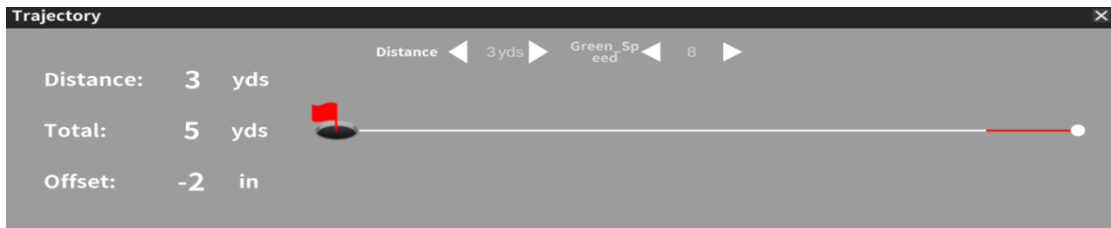



Figure 42: Ball trajectory

(13) Double-click the "Club Trail" sign with the process data icon , and a floating window will pop up to display the club trail of this putt.

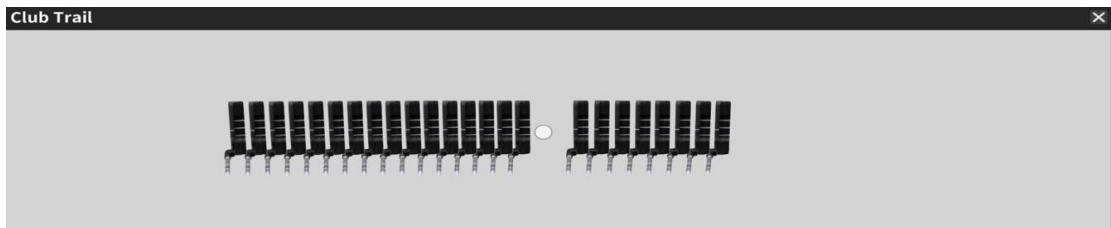


Figure 43 Club trail

#### 4.1.4 3D view of the club face

The 3D view of the club displays the data of the clubhead and clubface of this putt in 3D.

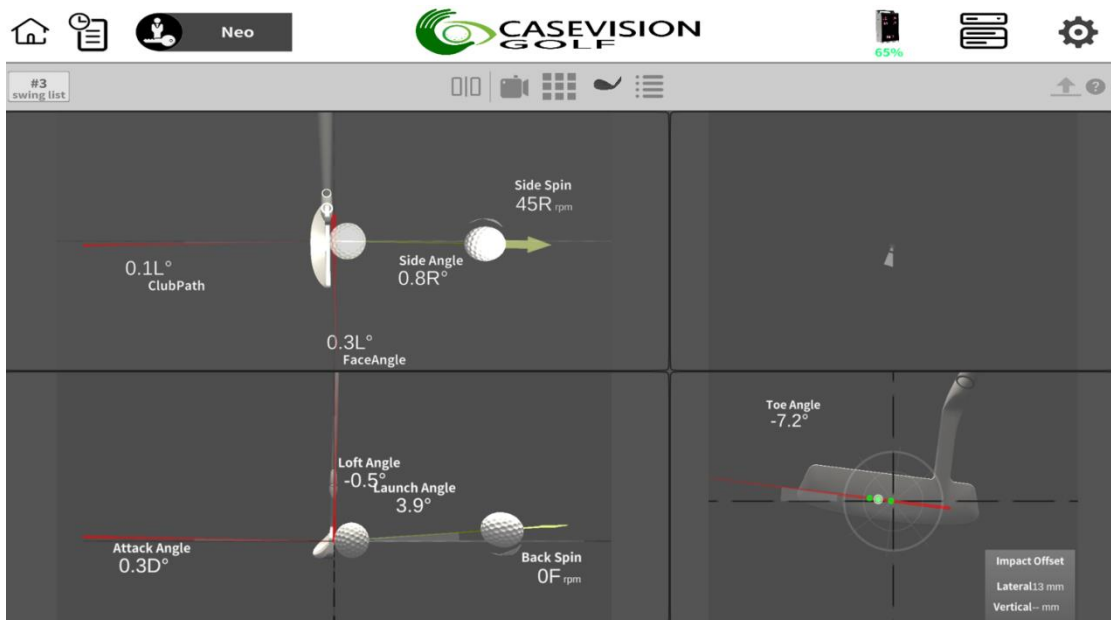



Figure 44 3D view of the club face

#### 4.1.5 Statistical View

In the statistical view, the average Avg and variance Std of all putting stroke are summarized, and the data of the last stroke is displayed. Click the

icon  in the upper right corner (Send Share) to share the statistical data via email.



Shot #	Ball Speed	Back swing time (s)	Forward swing time (s)	Pivot swing length (in)	Feed swing length (in)	Tempo
Putt #3	5.88mph					
Putt #2	6.37mph					
Putt #1	6.76mph					
Avg		0.81	0.42	6	12	1.91
Std		0.04	0.03	1	1	0.13
#3		0.76	0.4	5	11	1.9

Figure 45 Statistical view of the putting

#### 4.2 AR Interactive Smart Putting Green

Open the iPutt app software on the human-computer interaction ipad, as shown in Figure 46.

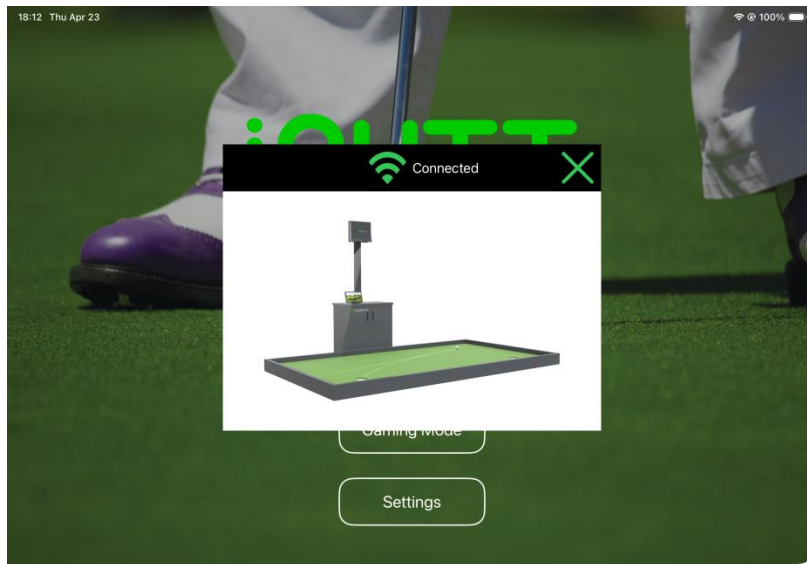


Figure 46

##### 4.2.1 Main interface

It includes "Practice Mode", "Gaming Mode", and "Settings". Any option can be selected in this interface.

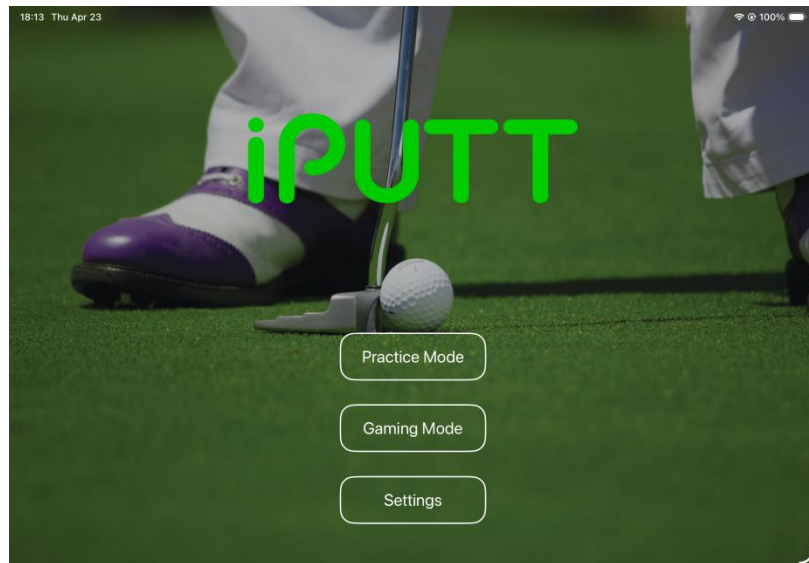


Figure 47

- Practice mode: Provides users with multiple training plans;
- Gaming modes: A variety of competitive and challenging games;
- Settings: Set the display unit, language, etc.

#### 4.2.2 Practice mode

This mode is divided into one putting plan setting and three sub-modes, namely Free, Drill, and Random. You can select any option on this interface and press "Back" to go back to the main menu.

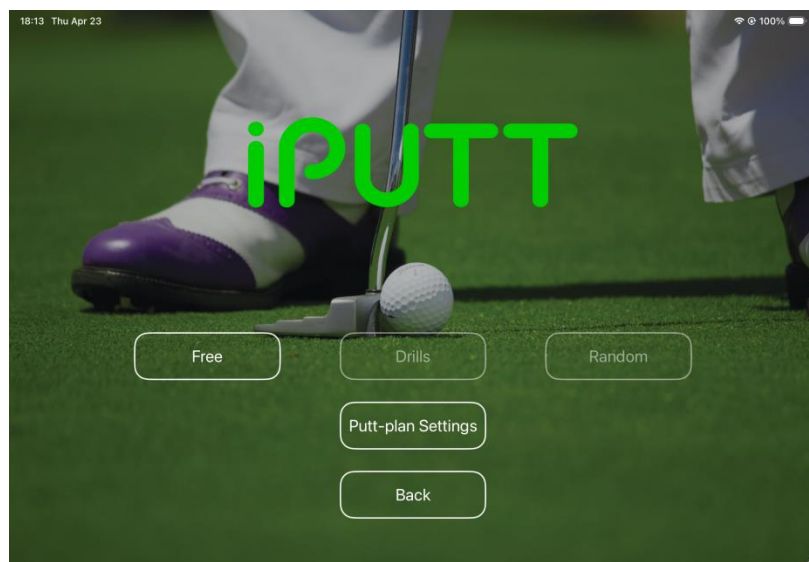


Figure 48

#### 4.2.2.1 Mode description

When changing the functional option Settings in one of the sub-modes, such as

the visualization of lines or colors, they will all be synchronized to the other sub-modes. During the use of any sub-mode in the training mode, if a non-existent ball path appears, the system will pop up a window to prompt "This ball path does not exist". Just select "Skip". Of course, the score of this hole will also be deducted when calculating the score.

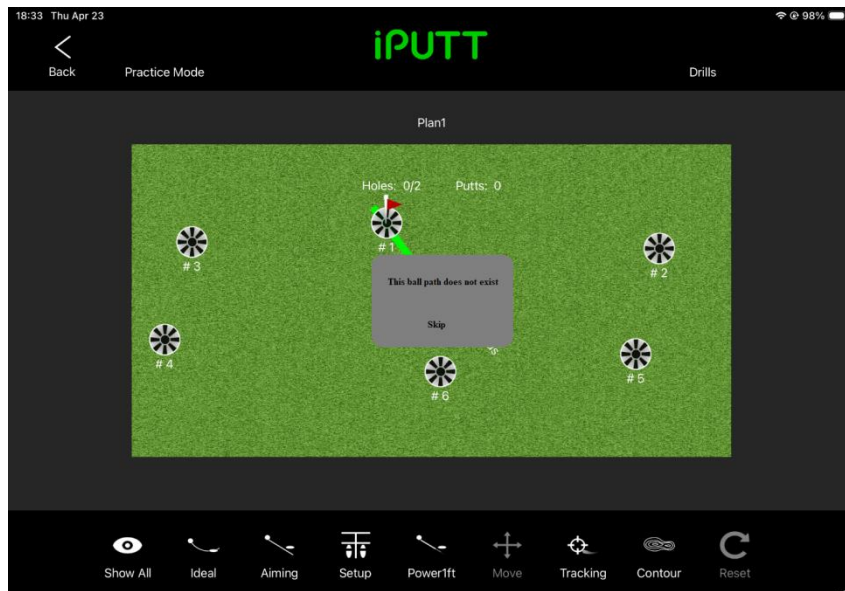


Figure 49

#### 4.2.2.2 Free

Display all the auxiliary functions of the iPUTT putter. In this mode, you can customize the free kick hole, ball position, and select any function you need.



Figure 50

#### 4.2.2.2.1 Holes and positions

When you use it for the first time, you need to first select the hole you want to putt, then click "Move" to choose the ball position, drag the golf ball icon to move the position, and click "Move" again to confirm the position. However, when you have been using iPUTT for some time and then turn on the default ball position again, it will be the last ball position you left when you last left the practice mode (Free, Drills, Random).



Figure 51

#### 4.2.2.2.2 Show/Hide all

You can choose to temporarily show or hide the visual lines on the green.

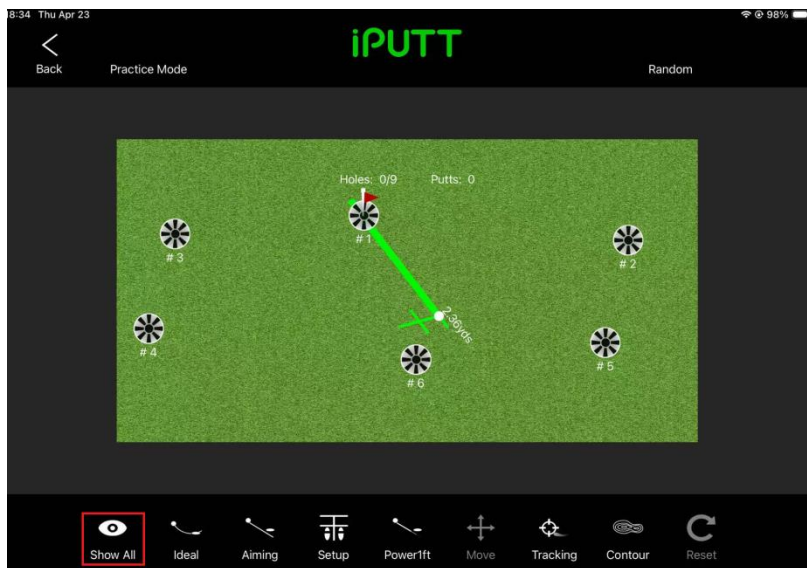


Figure 52

#### 4.2.2.2.3 Ideal line

The ideal line is the route that predicts the best roll of the ball into the hole based on the aiming line recommended by the equipment.

There are the following options:

- on/off: Turn on/off the ideal line function;
- Interval: Predict the rolling route interval of the ball entering the hole based on the range aimed at the direction of the hole;
- Color: Select the color displayed by the ideal line;
- Width: Adjustable line width of the ideal line;
- Brightness :The brightness of the ideal line can be adjusted.



Figure 53

#### 4.2.2.2.4 Aiming line

The aiming line is the recommended putting line for the equipment. Putt in the indicated direction to maximize the possibility of entering the hole.

There are the following options:

- on/off: Turn on/off aiming line function;
- Interval: The device is recommended to take a range as the aiming direction interval;
- color: Select the color displayed by the aiming line;
- Width: Adjustable line width of the aiming line;

- Brightness :The brightness of the aiming line can be adjusted.



Figure 54

#### 4.2.2.2.5 Setup Lines

The significance of the setup line is to attempt to prompt players to keep their positions unchanged as much as possible during repeated practice of putting, thereby enhancing the consistency of their putting techniques.

- on/off: turn on/off the setup line function;
- left/right hand: Select left/right hand;
- Color: Select the color of the setup line;
- Brightness: Set the brightness displayed by the setup line;
- Rotate: Change the Angle between the setup line and the aiming line. By default, they are the same. You can make appropriate adjustments according to your personal habits.
- Distance: Change the distance between the setup line and the ball. Everyone should adjust this position according to their body type to ensure that their eyes are directly above the ball.
- Shift: Shift the setup line left and right.



Figure 55

#### 4.2.2.2.6 Power

According to each person's putting habits, the power of the putting can be set. Here, the power of the putting is expressed by the rolling distance after passing through the hole, and there are three types: 2 feet, 1 foot, and 0 feet. The aiming line is recommended based on the setting power.



Figure 56

#### 4.2.2.2.7 Move

Set the position of the ball. Press this key to display the green area. Within this area, you can drag the "ball position" to any position. Press this key again to confirm

and return.



Figure 57

#### 4.2.2.2.8 Tracking line

Display the rolling route of the ball in real time.

- on/off: Turn on/off real-time scrolling route tracking display function;
- color: Set the color of the scroll line;
- Width: Set the line width of the scroll line;
- Brightness: Set the line brightness of the scroll line.



Figure 58

#### 4.2.2.2.9 Contour lines

Show the terrain of the green.

- on/off: Turn contour function on/off;
- Direction: The direction in which the slope is shown or hidden;
- Percentage: Display the Percentage value.



Figure 59

#### 4.2.2.2.10 Reset

Restore to the default state when you first entered "Free".

#### 4.2.2.3 Drills

You can set the plan scheme in the "Putt-plan Settings" for putting practice. By default, the ideal line, aiming line and setup line are displayed. You can also choose all the functions in "Free". (Except for "hole", "move" and "reset")

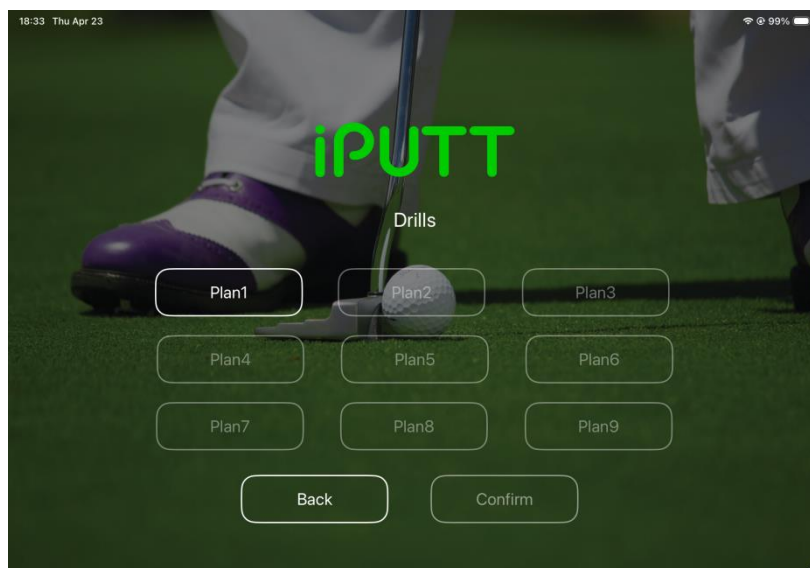


Figure 60

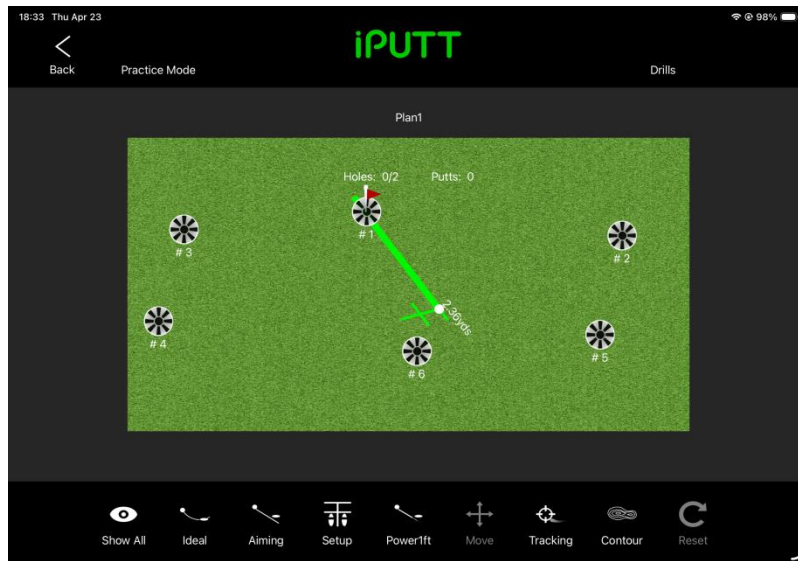


Figure 61

#### 4.2.2.4 Random

You can practice putting on the ball positions randomly generated by the system. By default, the ideal line, aiming line and setup line are displayed. You can also choose all the functions in "Free". (Except for "hole", "move" and "reset")

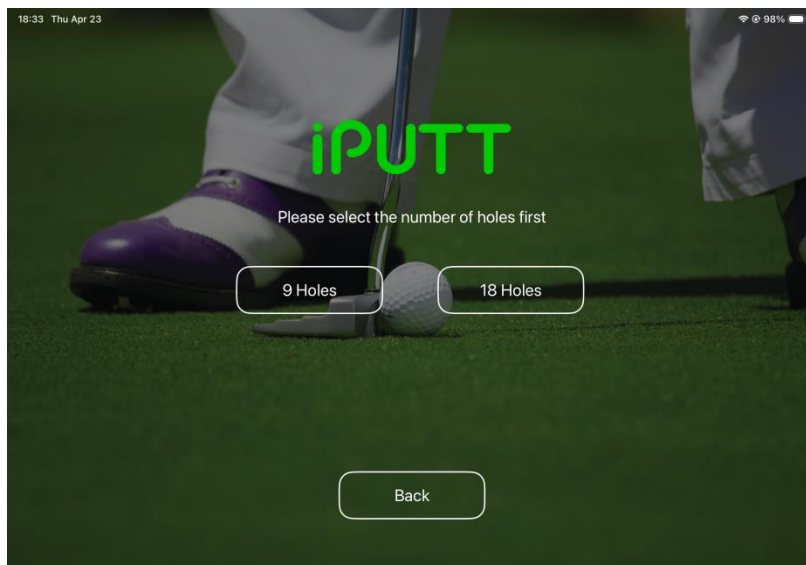


Figure 62

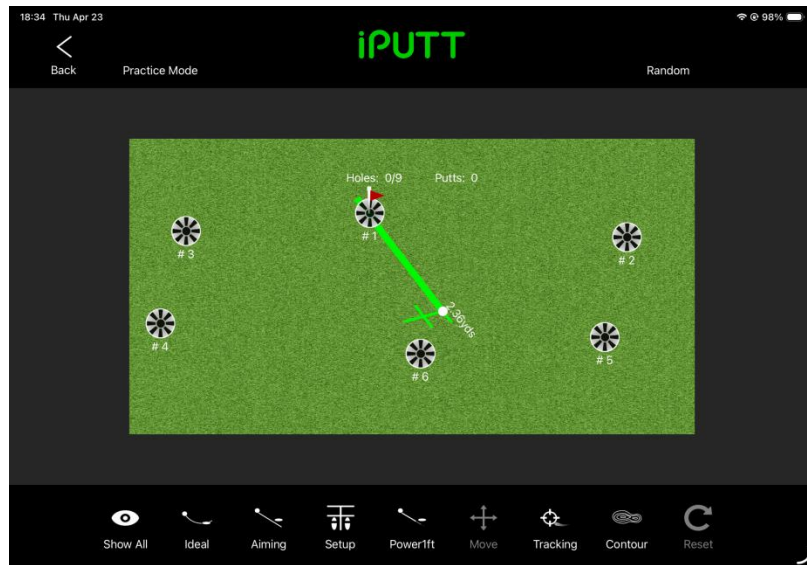


Figure 63

#### 4.2.2.5 Putt-plan Settings

You can set up to nine plans in the "Putt-Plan Settings", and each plan can have up to five ball paths. The set plan can be practiced for putting in the "Drills" mode. By default, there is no putt plan scheme and it needs to be added manually.

- First click the "Add" button to add the plan;
- In the configuration window that appears on the right, select the ball path, such as "Ball Path 1";
- Then select the number of the hole you want to enter on the right side of the ball path;
- Drag the icon button of the golf ball on the green to determine the ball position. The area within one yard of the hole is the no-ball zone;
- Just save it.

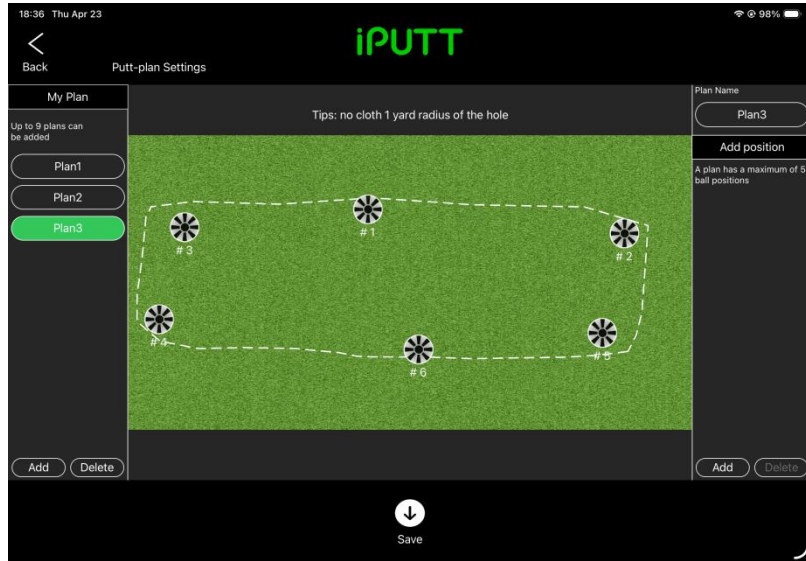


Figure 64

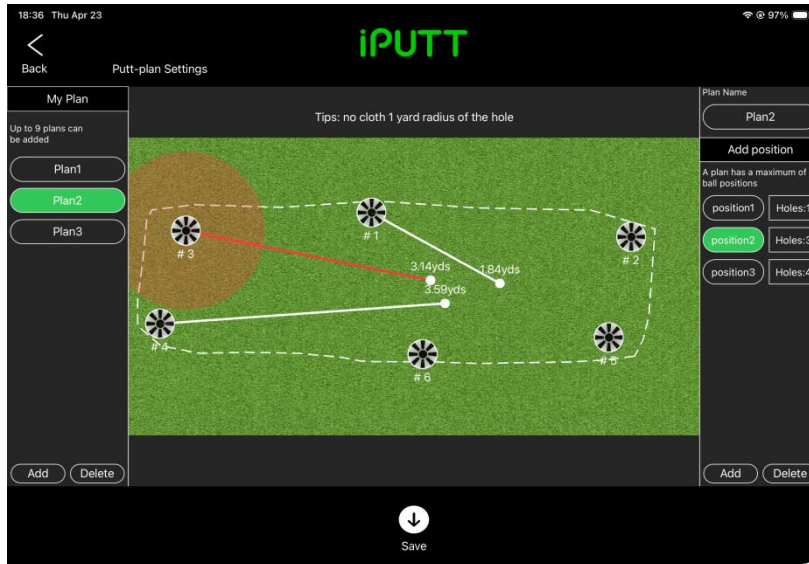


Figure 65

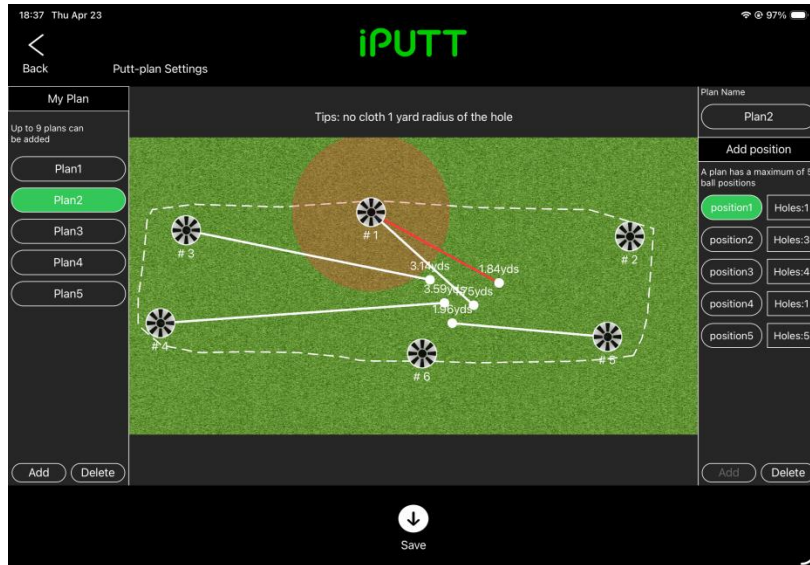


Figure 66

#### 4.2.3 Gaming mode

There are a total of 6 games in this mode, including Putpong, TicTactoe, Maze, Shooter, Randomshooter and Challenge Zone. You can select any option on this interface and press "Back" to return to the main menu.

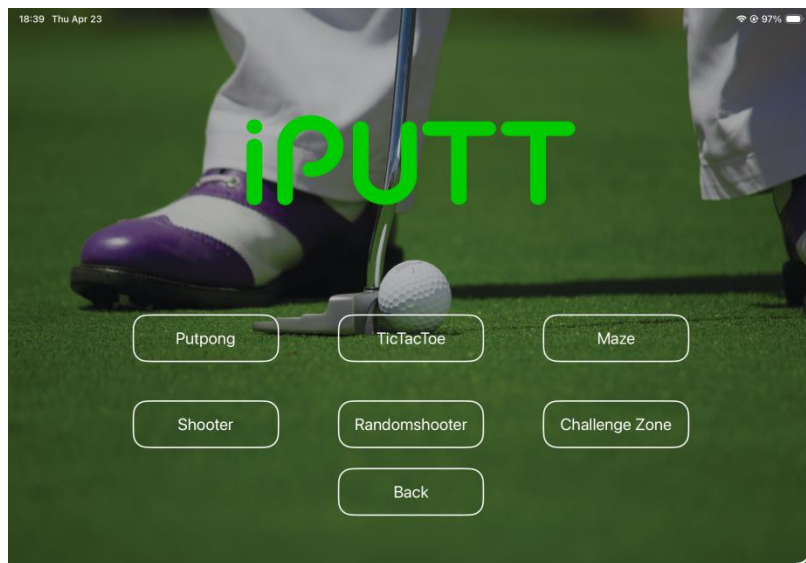


Figure 67

In the game mode, for those who have both the target area and the service area, their positions can be moved, but there are specified ranges: red for the target area and blue for the service area. Of course, when moving positions, it is also necessary to ensure that you are within the green area. As shown in the figure.

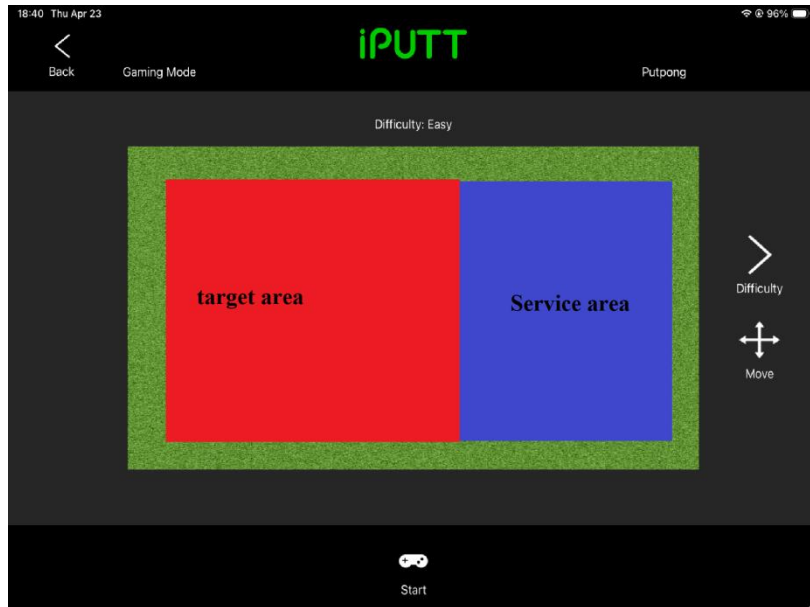


Figure 68

#### 4.2.3.1 Putpong

Introduction: Each time you need to putt the ball from the tee box into the cup area for 6 holes. Each time you hit an area, the ball will be eliminated. When all the balls are eliminated, the game ends and your total score will be recorded.

- You can be clicked on ">" Switch the difficulty. The greater the difficulty, the smaller the area of the hole cup;
- Click the "Move" button to move the hole cup and tee box to any position within their respective designated areas on the green.

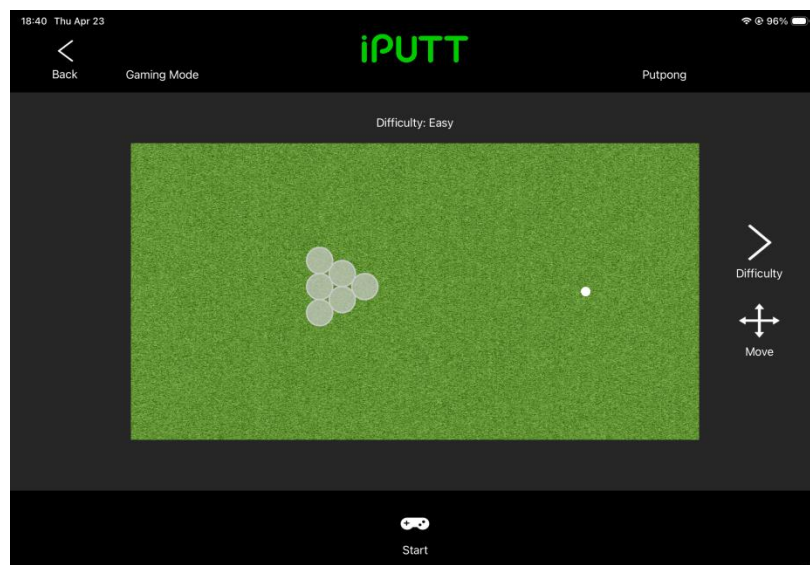


Figure 69

#### 4.2.3.2 TicTacToe

Introduction: Two players are required to participate. They take turns putting the ball into the tictactoe. After putting, their own marks, such as ☆ or ○, will appear. When a three-point line appears in any of the horizontal, vertical or diagonal directions, the player wins. Of course, there are also cases of draws.

- You can be clicked on ">" Switch the difficulty. The greater the difficulty, the smaller the area of the tictactoe;
- Click the "Move" button to move the tictactoe to any position within the specified range of the green.

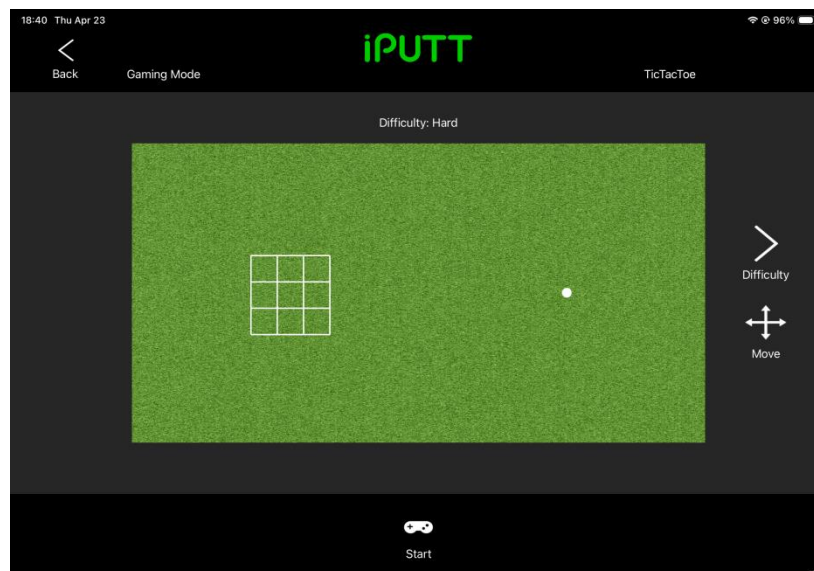


Figure70

#### 4.2.3.3 Maze

Introduction: Within the maze area, you need to putt the ball from the hitting area to the next target area. Under the condition of not violating other constraint rules, users are allowed to skip 1 to N targets and putt to the next target, but they cannot go beyond the maze area until they putt to the final target area, and the game ends.

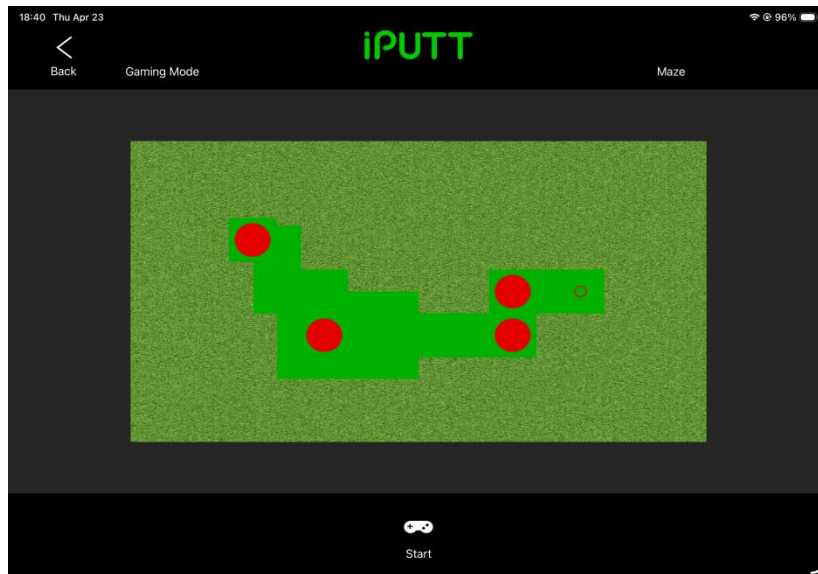


Figure71

#### 4.2.3.4 Shooter

Introduction: Putt the ball from the tee court to the shooting target surface. There are 5 rings in total. The closer to the center, the higher the score. Under the specified score, your score will be recorded.

- You can be clicked on ">" Switch the difficulty. The greater the difficulty, the smaller the shooting area;
- Click the "Move" button to move the shooting area to any position within the specified range of the green.



Figure72

#### 4.2.3.5 Randomshooter

Introduction: Choose either 9 or 18 putts to putt the ball from the tee court to the randomly appearing target area on the green. If you hit the target, you will score. Whether you hit or not, a new target position will be generated. Finally, your total score will be recorded.

- You can be clicked on ">" The greater the difficulty of the switch, the smaller the area of the target surface;
- Click the "Move" button to move the target area to any position within the specified range of the green.

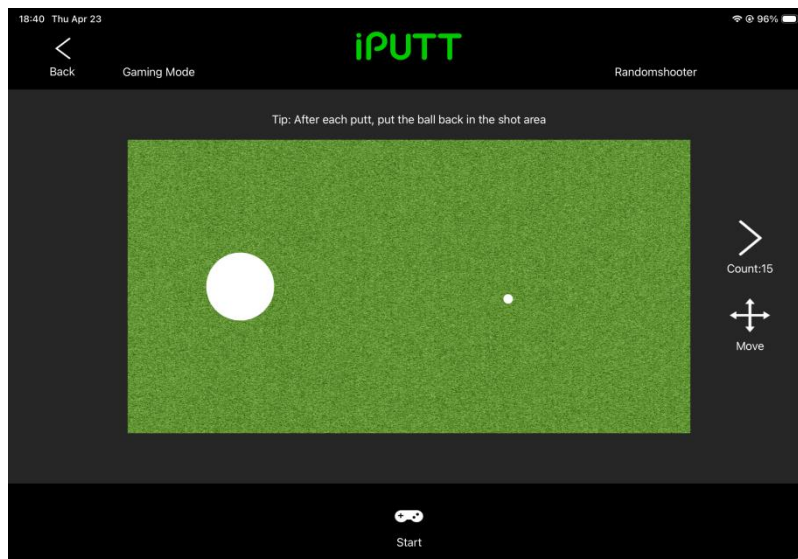


Figure73

#### 4.2.3.6 Challenge Zone

Introduction: The space range is 2 to 11 ft, with each 1 ft being a space. You need to control the power of your putting to ensure that each ball stops in a smaller space than the previous one. Only then is the challenge considered successful; otherwise, it is a direct failure. Finally, the number of consecutive successful putts will be recorded.

- You can be clicked on ">" Switch the difficulty. The greater the difficulty, the more challenge Spaces there will be;
- Click the "Move" button to move the challenge area to any position within the prescribed range of the green.

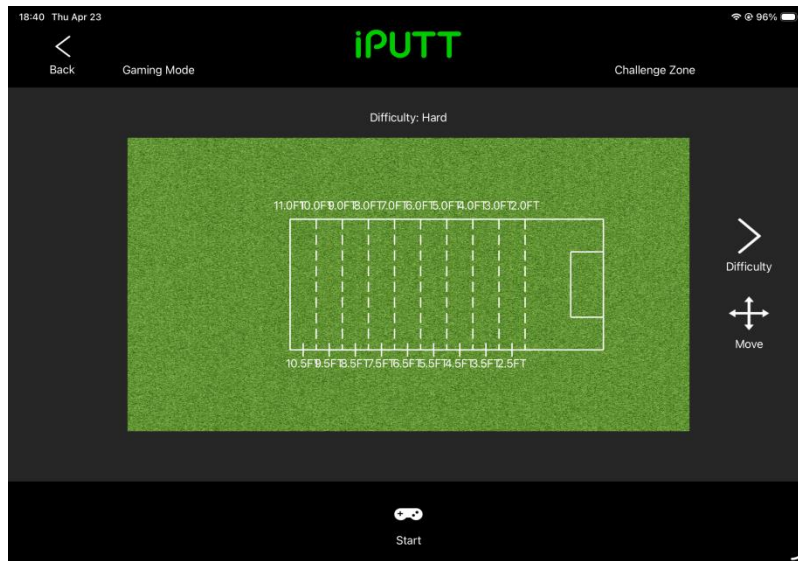


Figure74

#### 4.2.4 Settings

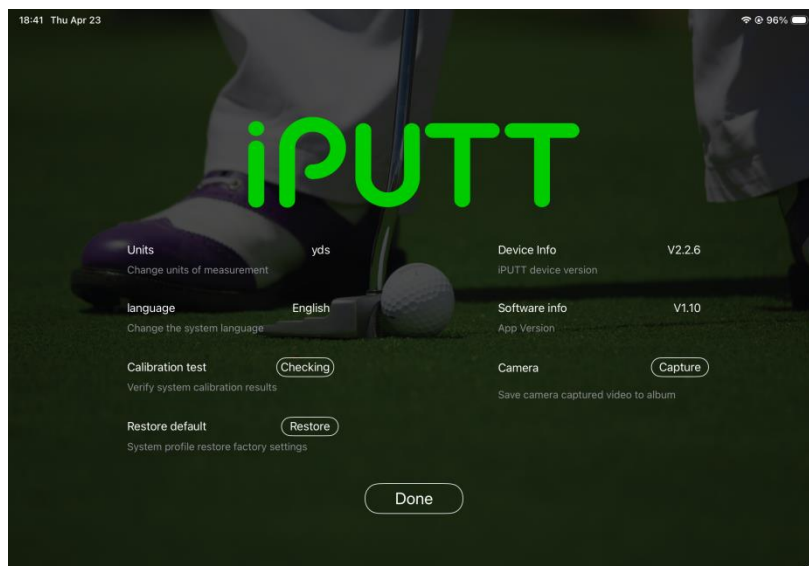


Figure75

- Unit: Switch system unit yds or ft
- Language; Switch the system language to Simplified Chinese or English
- Information: View device information version and software information version;
- Calibration detection: Verify the accuracy of the system. Under normal circumstances, the vertices of the lines should coincide with the hole cups and marking points; otherwise, the system needs to be recalibrated.

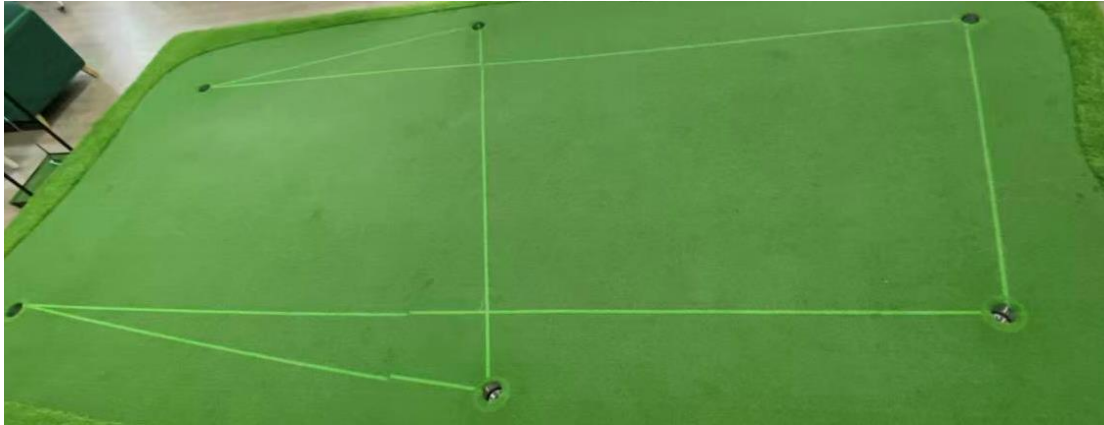


Figure76

- Camera: Get 2S video from the camera
- Restore to default: Restore personalized Settings such as putt plan, unit, and line visualization to factory Settings.

## 5. Troubleshooting

The following lists some problems that users may encounter during the use of the equipment. You can refer to the table to solve them by yourself or contact our company directly. We will provide you with satisfactory technical support and services.

Fault phenomenon	Possible reasons	Solution
There is no start-up phenomenon after being powered on	The power adapter is damaged.	Replace the power adapter
	The round hole plug is not inserted properly	Reinsert the round hole plug
No projected image appeared	The HDMI cable interface at the projector or device end is loose	Unplug and reinsert the HDMI interface cable
The precision error is relatively large.	The positions of the projector and the camera have changed	Reinstall the calibration
Lost tracking	(1)The camera is blocked;	(1) There are no obstacles between the

	(2)Beyond the camera's field of view	ball and the camera. (2) Normal phenomenon
The ball cannot be detected or is detected incorrectly	The camera is blocked or interfered with, such as other balls, shoes, or club head	Normal phenomenon
The screen is lagging.	Software failure	Power off and restart
No data on the putting rhythm was detected	The biomechanical sensor is not turned on or has no power	Power on or charge
It didn't leave the tracking line	The tracking line from the last putt didn't disappear	Move or spin the ball down until the tracking line of the previous putt disappears and then putt the next putting
There is no video of the putting stroke	The putting stroke camera was not connected to the iTrack hotspot	The putting stroke camera reconnects to the iTrack hotspot

## 6. Contact us

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