

# SenseRobot Chess

## Product Introduction



# SenseRobot Chess



Chess game camera

Display

Robotic Arm

Gripper

## Three major innovative technologies

### 3D chess piece recognition



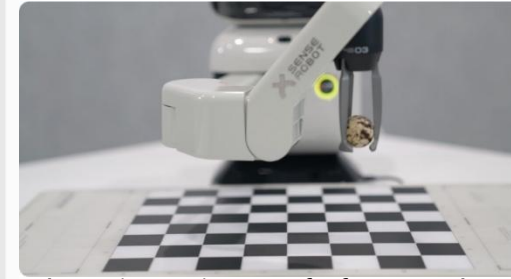
SenseRobot recognizes 3D chess pieces with an accuracy over **99.9%**.

### Hand-eye coordination



The vision algorithm's hand-eye coordination enables millimeter-level control accuracy.

### Precise velocity control



The gripper is so safe for people that it can handle a quail egg without crushing it.

## Robotic arm designed for the home use, grasping 3D chess pieces freely

### Innovative design of Robotic arm and gripper



### Dexterous arm with vertical precision grasping



### The gripper can even pick up a fallen chess piece



# Feature and Spec



Feature	
Language	UI: English Voice: English
Type	Chess Robot
AI Levels	<ul style="list-style-type: none"><li>• 25 levels (ELO200~2900)</li><li>• Apex Duel (ELO3200)</li></ul>
Endgames	145 endgames in six groups
Chess Lessons	Introductory and Primary Courses
Chess Exercises	1200+
Online Chess	Lichess.org
Classic Game Review	100 classic games
Self-set chess game	Y

Spec	
Product Model	RC3G-I
Size	Width 570mm , Depth 470mm , Height 385mm
Weight	5kg (including board, 34 chess pieces and power adapter)
Materials	Aluminum alloy inside, plastic ABS outside
Board	<b>Board Tray + Chess Board</b>
Display	5.5" 1280x720
Network	WiFi 802.11 b/g/n/ac 2.4/5GHz
Robotic Arm	4 degrees of freedom, gripper
Camera	Game camera x1
Speaker	4Ω3W
Human-robot interaction	Button control, microphone
Power supply	12V-3A

# Features Overview



- [ Challenge AI ] 25 levels of build-in AI from beginner to grandmaster ( covering ELO200~2900 )
- [ Apex Duel ] ELO3200 AI, beyond human level

- Beginner chess lessons
- Selected 1200+ chess exercises

Auto play selected 100 chess classic games with voice explanations

Chess Course  
and Exercises

Classic  
Game  
Reivew

Online  
Chess

Remotely play chess on  
lichess.org with global players

Challenge AI  
& Apex Duel

Endgame  
Challenge

Selected 145 classic chess  
endgames

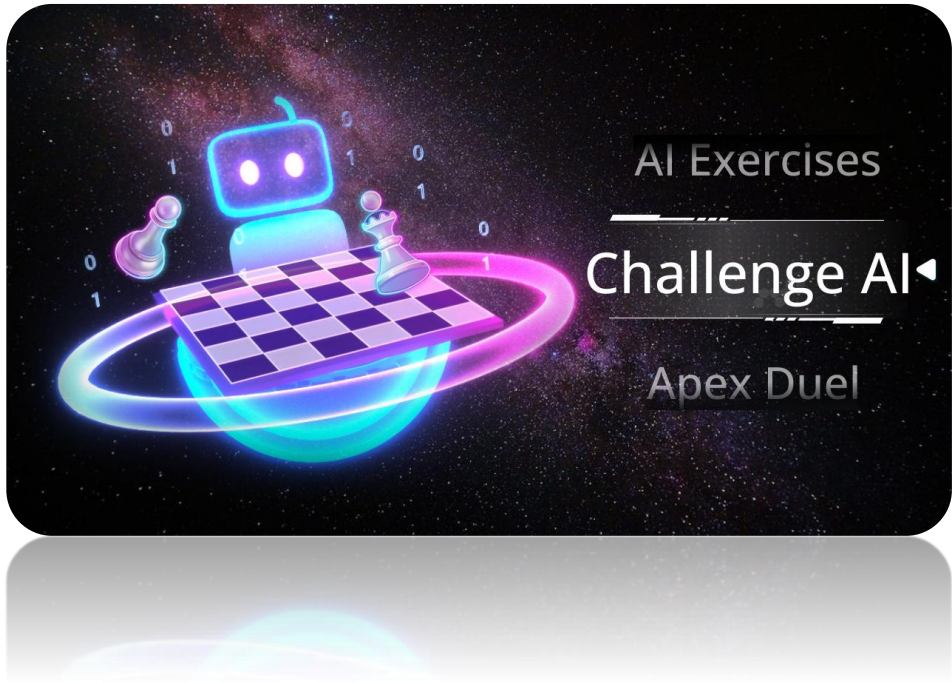
Self-set  
chess game

Users can set up their desired  
initial situation to play against  
the robot





# Chess AI



Challenge AI	Beginner	Level 1 (200)
		Level 2 (250)
		Level 3 (300)
		Level 4 (350)
		Level 5 (400)
		Level 6 (450)
	Entry	Level 7 (500)
		Level 8 (550)
		Level 9 (600)
		Level 10 (700)
	Intermediate	Level 11 (800)
		Level 12 (900)
		Level 13 (1000)
		Level 14 (1100)
		Level 15 (1200)
	Advanced	Level 16 (1300)
		Level 17 (1400)
		Level 18 (1500)
		Level 19 (1700)
	Master	Level 20 (1900)
		Level 21 (2100)
		Level 22 (2300)
	Grand Master	Level 23 (2500)
		Level 24 (2700)
		Level 25 (2900)
Apex Duel		3200

- Remark:
- The game supports [ Undo Move ] and [AI hint] functions, limited to three times per game;
  - The ELO score in brackets refers to the FIDE rating;
  - Grand Master and Apex Duel require internet connection

# Endgame

First level menu	Secondary menu		Number of situations
Endgame Challenge	Checkmate	Two Rooks Mate	5
		Queen Mate	5
		Rook Mate	5
		Two Bishops Mate	5
		Bishop and Knight Mate	5
		Queen vs Rook	5
	Pawn	Winning King and Pawn	5
		Drawn King and Pawn	5
		Intermediate Wins	5
		Intermediate Daws	5
		Advanced Wins	5
		Advanced Draws	5
	Minor Piece	Bishop	5
		Knight	5
		Knight vs Bishop	5
		Knight vs. Pawns	5
		Bishop vs Pawn	5
	Rook	Winning Rook Endings	5
		Drawn Rook Endings	5
		Rook vs Pawns	5
	Queen	Basic Queen Endings	5
		Defending Queen Endings	5
		Advanced Queen Endings	5
		Queen vs Pawns	5
	Imbalances	Rook vs Minor Piece	5
		Rook vs Two Minor Pieces	5
		Queen vs Two Rooks	5
		Basic Imbalances	5
		Advanced Imbalances	5

## Remark:

- 1. Endgame is only available when the robot is connected to the Internet.;
- 2. User only can use white chess pieces, and SenseRobot uses level 10 chess AI to play endgame against user ;
- 3. The logged-in user can choose any endgame in the secondary menu to play, but five situations under a certain endgame need to be unlocked one by one.
- 4. Under the visitor mode, user can use the first situation of each endgame , but following four situations are not open;
- 5. SenseRobot will time each level-clearing time of the user, and display the clearance time after the level-clearing. Later, the user's clearance time will be ranked on the App side.

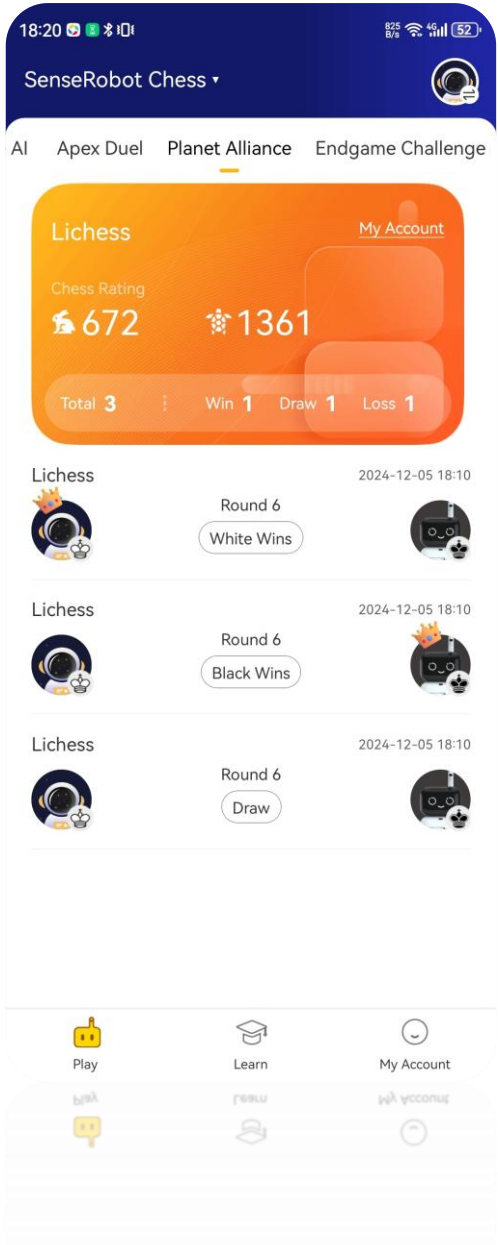
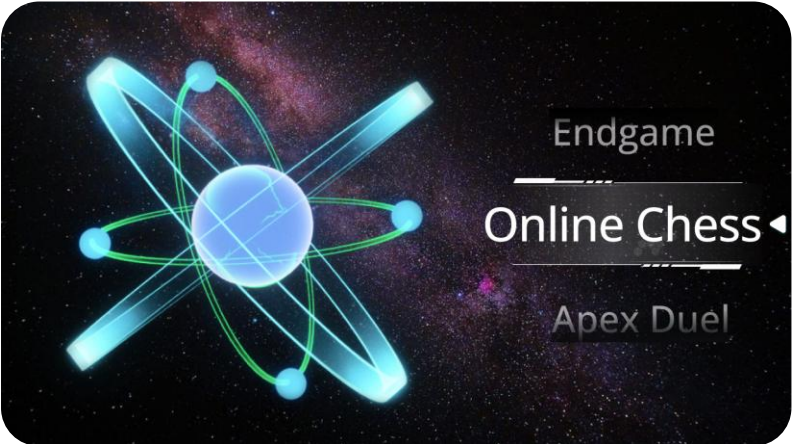
# Courses & Exercises



1. 11 Beginner Courses - Learn Key Moves and Openings
2. 1200+ exercises, covering levels from entry to master;
3. Exercise types include capture, multiple choice, single-step path, and multi-step path;
4. When an exercise has many steps or the answer is not unique, AI chess engine will help users to get the point in a relatively free way.



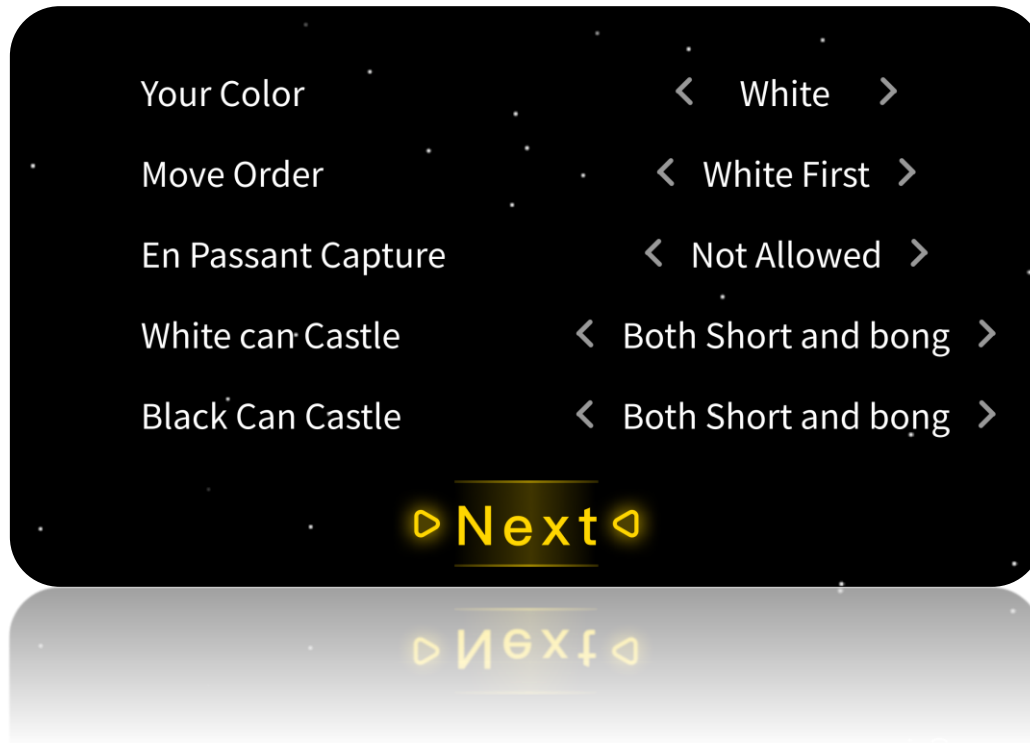
# Online Chess



# Real-person online chess

- Support Lichess
- Support App account binding and replay
- Support electronic chessboard display
- If the piece side assigned by lichess to the user is inconsistent with the user's current chess game, user can change the piece side by rotating the chessboard.

# Self-set chess game



1. Users can set up the situation they desire and play chess against the robot;
2. In this mode, you can also choose different AI levels to play chess against the robot;
3. Users can utilize this function to analyze and study chess games.

# Classic Game Review

Immortal Game – Sacrifice and Attack 未打谱  
Adolf Anderssen VS Lionel Kieseritzky 1-0

Central Key Territory, Every Square is Contested 未打谱  
Stein, Bernd VS Langeweg, Kick 1-0

Opening Lines with a Piece Sacrifice for a ... 未打谱  
Karpov, Anatoly VS Kortschnoj, Viktor Lvovich 1-0

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## Content :

- 100 Classic chess games with great value for improving your chess skills;
- Covering all kinds of classic opening systems

4.Bb5  
White might opt for a more solid structure to weaken the opponent's advantage, such as 4.d3. Although this move blocks the bishop's path, it creates no immediate weaknesses and allows White to develop pieces calmly.  
Another approach is 4.g3 Nf6 5.Bg2 Bg4 6.f3, where Black has

< Previous OK Auto Next >

## Model :

- The robot automatically play the chess game on the chessboard, accompanied by screen display and voice explanation;
- User can interrupt the game at a certain point in the middle and start playing against the AI from the current point.

Thanks

