WhizAaru™ Robot

User Manual

Whizrobo – 4th Generation Self-learning Platform

Table of Contents

1. Introduction

WhizAaru™ is an indoor interactive robot designed to support greeting, guided interaction, educational engagement, and multimedia presentation in structured environments. The robot combines intuitive interaction, controlled mobility, and expressive behavior to enhance engagement in shared indoor spaces.

WhizAaru™ is engineered for consistent performance, safe human interaction, and ease of operation across institutional and professional settings.

2. Application Scenarios

WhizAaru™ is suitable for deployment in:

- Educational institutions and learning laboratories
- Office reception and visitor assistance areas
- Exhibition halls and demonstration spaces
- Libraries, museums, and innovation centers
- Indoor public engagement and presentation zones

The robot complements human staff and structured programs by providing interactive support and guided experiences.

3. Operating Environment

For reliable performance and safe operation, WhizAaru™ should be used under the following conditions:

- Indoor environments only
- Flat, stable flooring without steps or ramps
- Dry surroundings with no exposure to liquids
- Adequate ambient lighting
- Moderate background noise levels

Operation outside these conditions may affect performance or safety.

4. Robot Overview

WhizAaru™ features an integrated design consisting of:

- A front-facing touch-enabled interactive display
- Camera and microphone system for interaction
- Integrated speakers for audio output
- Sensors for human presence and proximity awareness
- A wheeled base enabling smooth indoor movement

The robot is optimized for low-speed, predictable motion suitable for shared spaces.

5. Physical Characteristics

5.1 Dimensions and Weight

- **Overall Height:** Approximately 80–90 cm
- **Base Footprint:** Compact base suitable for standard indoor pathways
- **Approximate Weight: 18–22 kg** (configuration dependent)

The robot is designed with a low center of gravity to enhance stability during operation.

5.2 Placement and Stability

- Place the robot on a flat, level surface
- Maintain sufficient clearance around the base
- Avoid narrow, cluttered, or congested areas

The robot should not be lifted or carried manually by a single person.

6. Power and Startup

6.1 Power Connection

- Connect the robot to the designated power source
- Ensure the power cable is secured and does not obstruct movement

The robot powers on automatically once connected.

6.2 Startup Process

- Allow the system to complete initialization
- Do not interact with or move the robot during startup

6.3 Shutdown Procedure

- Use the on-screen shutdown option when available
- Disconnect power only after the robot has stopped all movement

7. Interaction Methods

7.1 Touch Interaction

The primary interaction method is the touch display:

- Tap icons and on-screen elements gently
- Avoid excessive pressure or sharp objects

7.2 Voice Interaction

WhizAaru™ supports spoken interaction:

- Speak clearly at a natural volume
- Maintain a reasonable distance from the robot

Voice interaction performance may vary depending on ambient noise and speech clarity.

7.3 Visual Interaction

On-screen animations, prompts, and expressions guide users through interactions and indicate system states such as listening, processing, or responding.

8. Functional Modes

8.1 Reception Mode

Reception Mode enables WhizAaru™ to:

- Detect approaching users
- Display greeting messages
- Provide guided interaction options

This mode is well suited for entrances, information desks, and demonstration areas.

8.2 Information and Learning Mode

In this mode, WhizAaru™:

- Presents structured educational or informational content
- Displays images, videos, and guided explanations
- Supports interactive learning sessions

Content should be reviewed and approved before deployment.

8.3 Voice Interaction Mode

Voice Interaction Mode allows users to:

- Ask questions
- Request information
- Navigate available content

Responses are delivered through spoken output and on-screen display.

8.4 Multimedia Playback Mode

WhizAaru™ supports multimedia playback for:

- Presentations
- Demonstrations
- Educational and promotional content

Audio and visual settings can be adjusted to suit the surrounding environment.

8.5 Dance and Performance Mode

This mode enables WhizAaru™ to perform pre-programmed expressive movements.

Safety Requirements

- Maintain a clear area around the robot
- Do not operate in crowded or confined spaces
- Supervise children closely
- Ensure no obstacles are present during operation

8.6 Assisted Movement Mode

Assisted Movement Mode allows controlled movement under supervision.

Operational Guidelines

- Ensure the intended path is clear
- Monitor movement continuously
- Stop operation immediately if unsafe conditions arise

9. Movement and Navigation Behavior

- Designed for smooth indoor movement
- Low-speed motion appropriate for shared spaces
- Predictable stopping and turning behavior

The robot is not designed for stairs, ramps, or uneven surfaces.

10. Display and Audio Controls

WhizAaru™ provides adjustable controls for:

- Screen brightness
- Audio volume
- Audio muting when required

These controls allow the robot to adapt to different lighting and noise conditions.

11. Safety Guidelines

11.1 General Safety

- Indoor use only
- Keep away from liquids and heat sources
- Do not sit, lean, or place objects on the robot

11.2 Child Safety

- Adult supervision is required
- Do not allow climbing or physical interference
- Encourage gentle interaction at all times

11.3 Electrical Safety

- Use approved power accessories
- Disconnect power before cleaning
- Do not operate with damaged cables

11.4 Operational Safety

- Maintain clear space during movement and performance modes
- Stop operation if abnormal behavior is observed
- Do not attempt to modify or override system behavior

12. Maintenance and Care

12.1 Cleaning

- Use a soft, dry cloth
- Do not use liquid cleaners or sprays

12.2 Routine Inspection

- Inspect for visible damage
- Ensure cables and connectors are secure
- Power off the robot when not in use

13. Noise and Environmental Considerations

- Designed for quiet indoor operation
- Audio levels adjustable for comfort
- Movement noise remains within typical indoor limits

14. Operational Limitations

WhizAaru™ is designed for structured indoor environments and does not operate independently in unstructured or unpredictable conditions. Performance may vary depending on environment, content, and user interaction.

15. Storage and Handling

- Power off before relocation
- Move the robot carefully with assistance
- Store in a dry, temperature-controlled environment

16. Basic Specifications

General

- **Robot Type:** Indoor interactive service robot
- **Primary Applications:** Greeting, guided interaction, learning engagement, multimedia presentation

Physical Characteristics

- **Overall Height:** Approximately 80–90 cm
- **Base Design:** Compact indoor base
- **Approximate Weight: 18–22 kg**
- **Exterior Construction:** Enclosed, impact-resistant housing

Display and Interaction

- **Display Type:** Integrated touch-enabled display
- **Display Size:** Approximately 10 inches
- **Interaction Methods:** Touch, voice, visual prompts

Audio and Visual System

- **Camera:** Integrated front-facing camera
- **Microphones:** Built-in microphone array
- **Speakers:** Integrated speakers for voice and multimedia

Mobility and Motion

- **Movement Type:** Wheeled indoor mobility
- **Operating Speed:** Low-speed, human-safe motion
- **Supported Modes:** Stationary interaction, assisted movement, performance movement

Sensors

- **Human Presence Detection:** Supported
- **Proximity Awareness:** Supported

Power

- **Power Source:** External power supply
- **Operating Duration:** Continuous operation while connected to power

Environmental Requirements

- **Operating Environment:** Indoor only
- **Flooring:** Flat and stable
- **Temperature:** Normal indoor room temperature
- **Humidity:** Dry, non-condensing environment

17. Conclusion

WhizAaru™ delivers reliable interactive experiences through controlled movement, intuitive interaction, and structured functionality. Proper placement, supervision, and maintenance ensure consistent performance and long-term usability across a wide range of indoor applications.