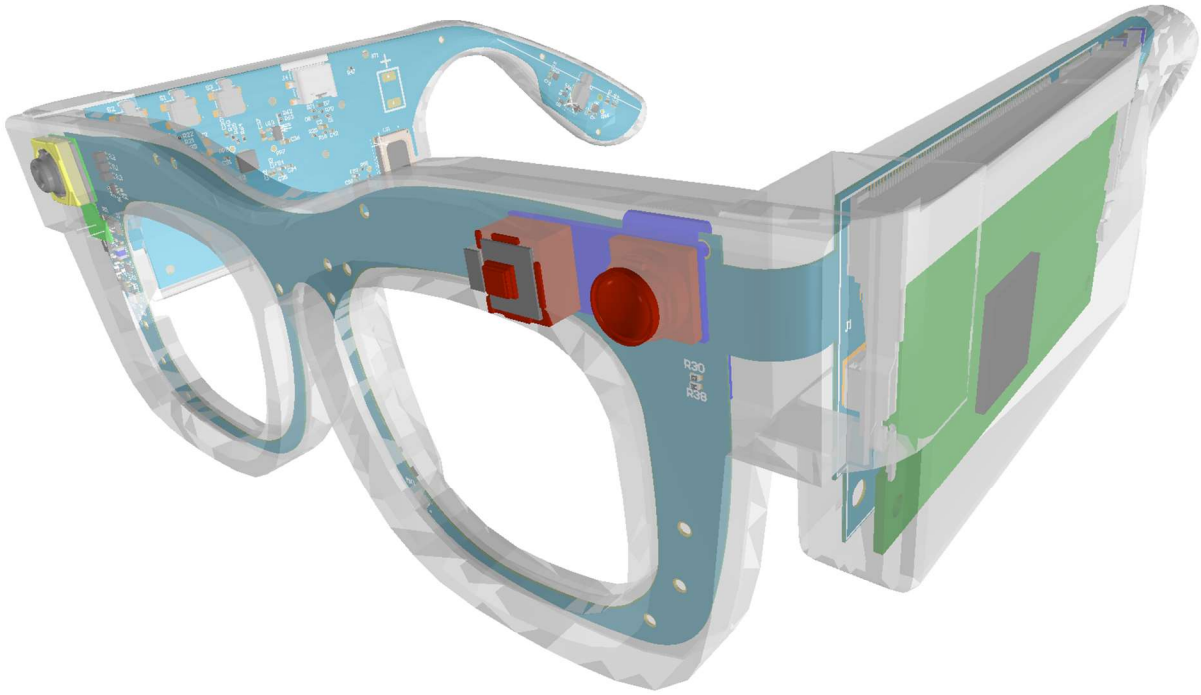
PiGlasses

The Next-Generation Smart Glasses for Vision, Navigation & Independence



Smarter. More Aware. Truly Assistive.

PiGlasses is opening the future of 3D Smart Glasses, initially starting with visually impaired individuals. Our AI-powered smart glasses are designed to help people with low vision and blindness navigate, perceive, and interact with their environment more independently and confidently.

Unlike traditional aids, PiGlasses understand the environment in 3D and describe it conversationally using AI, real-time depth perception, and intuitive haptic feedback.

These are not just glasses, they're a personal companion for mobility, information access, and autonomy

Key Advantages

- **AI-Powered Perception**
  Combining 3D depth (ToF) and RGB imaging to map environments, integrate with AI models to see and also know distances with precision, and SLAM capabilities

- **Real-Time 3D Spatial Awareness**
  Maps surroundings and provides step-by-step navigation indoors and outdoors.

- **Haptic Feedback Engine**
  Vibration cues indicate direction, distance, and objects nearby. This is the future of human computer immersion.

- **Voice Assistant Integration**
  Integration with AI models allows reading documents, signs, menus; answers user queries naturally and in a conversational way.

- **Use it all day**
  All-day wearable with extended battery and ergonomic design.

Beyond Accessibility: A Platform for Innovation

PiGlasses are more than a wearable assistive device — they're a **developer-ready AI platform** for spatial computing and sensor fusion, similar to what Raspberry Pi unlocked for embedded computing. Built on a modular, Linux-based system and powered by edge AI, PiGlasses enable innovation across multiple verticals beyond visual impairment.

A New Compute Interface

PiGlasses are poised to become the next frontier of personal computing, always-on, spatially aware, and contextually intelligent. The PiGlasses platform is designed for this future, enabling developers and researchers to build on top of a sensor-rich, real-world interface.

Expandable Use of Cases Across Industries

Like Raspberry Pi sparked creativity in education, robotics, and automation, PiGlasses opens doors in:

- **Industrial Safety**: Real-time obstacle detection and scene description for workers in hazardous environments.
- **Logistics & Warehousing**: Barcode scanning, shelf recognition, and voice-controlled inventory tracking.
- **Tourism & Museums**: AI-guided narration of landmarks or exhibits with haptic directionality.
- **Aging & Cognitive Support**: Reminders, facial recognition based on ToF, and environment descriptions for individuals with memory loss.
- **STEM & Education**: Hands-on coding and computer vision applications in classrooms and tech labs.

Developer-Ready Architecture

- **Linux-Based System**: Compatible with common developer tools and libraries.
- **Access to Sensors**: ToF, IMU, RGB camera, microphone, and haptic/audio output, and GPS.
- **Edge AI Ready**: Run custom models for object detection, scene analysis, voice agents directly on-device, SLAM.
- **Extensible APIs**: Planned SDK to allow developers to create, test, and deploy their own apps.
- **Community Ecosystem**: Support for open-source contributions, tutorials, and community-driven applications.

Technology Specs

- **Dual-Sensor System** – Integrated ToF + RGB cameras for 3D depth mapping and image capture.
- **Haptic + Audio Interface** – Custom PCB with haptic motors, microphone, and spatial audio feedback.
- **Connectivity** – Bluetooth, Wi-Fi, GPS, and IMU for precise localization and seamless app sync.
- **Cross-Platform App** – Companion mobile app for configuration, voice transcription, and updates.
- **Developer Ready** –for universities and research partners to build new applications.

Experience the Future of Vision Assistance

PiGlasses redefines accessibility by merging AI perception, 3D spatial reasoning, and human-centered design empowering people who are blind or visually impaired to navigate, read, and interact with the world independently.

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This hardware has been designed at the request of FOVIONICS Incorporated by Pi Modules Technologies L.P. under the Raspberry Pi Design Network

FOVIONICS

Raspberry Pi Design Partner

Pi modules technologies