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Three-Dimensional Gaze Control of Robots for Navigation and Object Manipulation

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Summary: A control system to guide robots for navigation and object manipulation that uses 3D eye tracking

Description: A three-dimensional (3D) gaze-based robot control system has been developed to guide robots for navigation and object manipulation. In this method, individuals can use their eyes to operate assistive robots for identifying, approaching, and manipulating target objects. Eye movements are highly correlated with motor intentions and cognition interests. Furthermore, eye movements are often retained by motor impaired people. Thus, eye tracking provides an intuitive, effortless, and effective communication signal directly relevant for robots. The system provides a new strategy to determine the position of the target object by monitoring 3D gaze, provides a novel approach to differentiate normal behavioral eye movements from intentional eye "commands", and provides a natural and effective strategy to use eye gaze data to create robot operation commands.

Main Advantages of this Invention

- Provides a natural interface between the user and the robot
- Provides a control system for mobility and speech impaired users
- Improved accuracy and range of use over other technologies

Potential Areas of Application

- Medical Applications
- Military and Aerospace
- Manufacturing
- Gaming
- Virtual Reality

ID number: 15005

Intellectual Property Status: US provisional patent filed

Opportunity: We are seeking an exclusive or non-exclusive licensee for marketing, manufacturing, and sale of this technology.

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