Abstract

In a simulated environment, robotic agents are tasked with correctly responding to user commands and foreign sounds. In doing so, an accessible control interface is developed and a novel, user-friendly HRI system is demonstrated.

Contributions

• Interface for sending audio and gesture-based commands to an autonomous robot.
• Software framework in Unity Engine for development of human robot interfaces.

Features

• User triggers command event that dictates the robot’s autonomous behavior.
• Behavior trees manage the complex behaviors of the military team and the civilian population.

Simulation

Commands in the form of gestures and mapped audio signals propagate into the scenario. Successful recognition of the command determines how the robot responds.

Applications

• Interface can be adapted to a physical robot as an accessible HRI tool
• Simulation environment can be utilized in further experimentation with convenient control modalities