EDITH COWAN UNIVERSITY

PROJECT DETAILS

Project Title:

Embodied AI for challenging human-robot collaboration tasks

Project Summary:

It is desired to develop assistive robots that can understand and respond to natural language to facilitate intuitive human-robot collaboration for household chores. Embodied AI focuses on agents that can interact with their environment and is crucial for advanced human-robot collaboration. Recently, Large Language Models (LLMs) have been investigated across several simulated human-robot collaboration tasks that require planning, coordination, reasoning, and perception. Results indicate that LLM-based embodied agents require significant improvements to reach human-level performance. This project aims to explore novel multi-modalities to overcome the reported challenges. This research can transform how older adults are cared for and create a foundation for other applications where intuitive accessibility to robots can benefit humanity.

Preferred Applicant Skillset:

We are looking for a highly motivated PhD candidate with interest/ background in Human-Robot Interaction and collaboration. In addition, knowledge or a willingness to upskill in natural language processing (including using large language models), and embodied AI are highly desired. Strong programming skills are required (preferably in Python), experience with ROS2 is a bonus. The candidate is expected to have strong communication (oral and written), critical thinking, problem-solving, data analysis, and project management skills.

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