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Development Team

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Project Overview

The aim of this Master's Software Engineering project is to develop a computer vision system for object and people recognition, integrated with a speech interface, to enable seamless control of a Franka Emika robotic arm using voice commands. The project will leverage cutting-edge technologies in computer vision and natural language processing to create an intelligent system that can identify objects and individuals in its environment and carry out specific tasks based on spoken instructions.

Background

The client develops technology in Human-Robot Interaction. Robotics is an interdisciplinary field with backgrounds in mechatronics, electronics, and computer science (CS). Due to the lower proportion of CS students, robotics software often is poorly developed. The client research group wishes to have a software solution that uses cutting edge AI APIs.

Goals

- Computer Vision System:
 - Detect and recognise various objects in real time
 - Identify and track people
 - Understand gestures or movements as input cues
- Speech Interface:
 - Accurate speech recognition
 - Robust natural language processing
 - Seamless integration with robotic arm control system
- Robotic Arm Control:
 - Respond to voice commands for various actions
 - Ensure safe and precise movements in response to spoken instructions

Documentation Shortcuts

Name	Link
Requirements	Requirements
Meetings	Meeting Notes
Design & Architecture	Design & Architecture
Sprints Documentation	Sprints

External Links

Name	Link
GitHub Repository	https://github.com/COMP90082-2023-SM2/AI-RedBack
Trello Workspace	https://trello.com/b/RZ4YBSWm/ai
Deployment	

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Sicheng NIE

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