

Faculty of Engineering

Summer Research Program 2023-2024

Project Title: A robot companion for mealtime support

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Objective

Design, implement, and evaluate a proof-of-concept robot companion to support adults with eating disorders and/or disordered eating behaviours during mealtimes

Project Details

Mealtimes are one of the most stressful times for people with eating disorders (EDs). Individuals experience heightened distress and anxiety that are driven by ED thoughts, such as fear of food and weight gain. However, adequate consumption during mealtimes is imperative for renourishment, and strategies that reduce eating disorder thoughts before, during and after a meal are critical for recovery. Nonetheless, the accessibility to such support is limited, particularly for adults with EDs. This is mainly due to the taxing and challenging nature of the process for all those involved (patients, carers, and health professionals), a narrowed focus on the treatment and recovery of adolescents and young adults with EDs, and the high cost associated with these services.

This project will develop, deploy and evaluate a robot companion that provides mealtime support for adults with EDs, thereby creating a step-change in our ability to provide easily accessible and affordable therapeutic support for this population. This includes:

1. Planning and conducting interviews/focus groups with adults with EDs, their families and health professionals' perspectives in order to determine desired robot features and behaviours
2. Implementing a prototype using commercially available robotic platforms (e.g., Yanshee, Cozmo, etc.)
3. Planning and conducting a small-scale user study to evaluate and compare the robot prototype to other traditional approaches

Prerequisites

Candidates in Year 3 or later are preferred. Experience with Python, ROS, and machine learning (computer vision) is required. Experience in human-centred design (co-design, interviews, etc.) is desirable.

Additional Information

Applicants may be required to attend an interview. This project will be done in collaboration with Assoc. Prof. Gemma Sharp (Neuroscience) and Dr Roisin McNaney (IT).