



MIE498H1: Research Thesis 2025-2026

Supervisor	Mark Chignell
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Number of Positions	3
Open to	Mechanical and Industrial Engineering Students
Term Offered	Full-year
Research Area	Human Factors
Research Topic	Online Cognitive Assessment Games for Early Detection of Cognitive Decline

Project Description

This project aims to develop, evaluate, and enhance a series of cognitive assessment games. Each game is designed to assess cognitive functions, including cognitive speed, response inhibition, and working memory, with a focus on detecting early-onset cognitive decline in older adults. In this project, students will assist graduate students in designing new features for the whack-a-mole games (using React, JavaScript, CSS/HTML) for better user engagement and critical assessment of cognitive status. The students will then conduct pilot studies to collect data from participants, assessing the usability and effectiveness of the games. Based on the feedback and performance data collected, students will further refine the game design and implement necessary changes. This project offers an opportunity to work in the interdisciplinary area of human-computer interaction, healthcare technology and psychology, contributing to innovative solutions for cognitive health assessment in older adults.

Additional Information

N/A

Application Instructions

Please submit CV, unofficial transcript and statement of interest to chignell@mie.utoronto.ca