



MIE498H1: Research Thesis 2025-2026

Supervisor	Mark Chignell
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Number of Positions	2
Open to	Mechanical and Industrial Engineering Students
Term Offered	Full-year
Research Area	Human Factors
Research Topic	Design and Usability Enhancement of Exergaming System for Older Adults

Project Description

2RaceWithMe is an innovative exergaming technology designed to promote physical wellness among older adults. This system integrates a pedal exerciser with an extensive library of travel and tourism videos, creating an immersive and engaging experience. Users can virtually travel to various destinations worldwide while pedaling, enhancing both physical activity and mental stimulation. The pedal exerciser is specially designed for older adults, providing greater balance and stability, and can be used while seated, making it accessible for wheelchair users as well. In this project, students will explore different types of exercise device to provide an alternative to the hand and foot pedals currently used. Depending on skills and experience students may also work on other parts of the exergaming system. The goal is to meet a wide range of user needs while maintaining a simple and efficient design for the manufacturing process. Students will assist graduate students in conducting a pilot study to collect data from participants and assess the usability and effectiveness of the new design. Based on the feedback collected, students will further refine the prototype design and prepare it for future manufacturing. This project provides an opportunity to contribute to the development of cutting-edge exergaming technology aimed at improving the physical and mental well-being of older adults.

Additional Information	N/A
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Application Instructions	Please submit CV, unofficial transcript and statement of interest to chignell@mie.utoronto.ca
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