

Department of Computer Science

St. Francis Xavier University

Presents

**Explaining Body Composition After Bariatric Surgery using
Accelerometry**

by

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M.Sc. Thesis Proposal Presentation

Monday, June 5th at 2pm in Annex 23A

Obesity, a complex condition involving genetic, behavioural, socioeconomic, and environmental factors, poses significant health risks and contributes to increased morbidity and mortality. Bariatric surgery is an effective treatment for individuals with severe obesity, resulting in substantial weight loss. However, weight regain remains a significant challenge in the long-term after surgery. This study focuses on analyzing movement patterns of patients who have undergone bariatric surgery using wearable accelerometry to investigate the relationships between movement behaviours, body composition, and weight regain. An intelligent system employing Machine Learning (ML) techniques will be utilized to predict total fat percentage and visceral fat. Associations between age, sedentary behaviour, post-surgery BMI, day- and night-time movement, and changes in body composition following bariatric surgery will be explored. We expect that the findings will contribute to a better understanding of factors influencing weight regain and may inform future interventions to promote long-term weight loss maintenance in bariatric surgery patients.