

Research Opportunity for MEng Projects at Intelligent Medical Image Computing Systems (IMICS) Lab

Research Area: Deep Learning, Natural Language Processing, Medical Image Analysis, Precision Medicine

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At Intelligent Medical Image Computing Systems Lab (IMICS Lab) at The Hospital for Sick Children, we investigate and develop Artificial Intelligence (AI) algorithms for precision medicine using medical imaging (e.g., MRI, CT) and radiology reports. As an example, we are developing MRI-based AI algorithms to identify the genetic markers of pediatric brain tumours and to predict the tumour response to treatment, by predicting tumour growth/shrinkage over time. Our goal is to design and develop AI-based diagnostic and prognostic tools to augment the ability of clinicians to improve the quality of care for patients. Developing Human-centered (explainable) and Compassionate AI are two main objectives of our research where the goal is to enable the user to understand and interact with AI, and to use AI to enable equitable access to healthcare for all.

The technical background required for IMICS projects are Machine (Deep) Learning, Computer Vision, Medical Image Analysis, Statistical Analysis, and Natural Language Processing.

By joining our team, you will have the opportunity to work closely with Radiologists at SickKids Hospital and have access to world class medical data and high-performance computing facility. You will also work with a team of graduate and undergraduate students who investigate different aspects of AI in medicine.

Based at SickKids Hospital, IMICS Lab is affiliated with Department of Medical Imaging, Institute of Medical Science, Department of Mechanical and Industrial Engineering, and Department of Computer Science at the University of Toronto.

IMICS Lab: www.imics.ca