Alberta RISE Workshop - Bridging Surgical Robotics and AI

Date: 13 Nov 2024 - Time: 3:30 PM - 5:00 PM - Location: ECERF W2-010

Alberta Robotics & Intelligent Systems Expo
ALBERTA RISE 2024

U Alberta Telerobotic & Biorobotic Systems Group

UNIVERSITY OF ALBERTA

Focus:

Considering the rapid advancement and applications of artificial intelligence (AI), healthcare could be transformed when autonomous agents are deployed to automate a variety of care delivery tasks under the supervision of care providers at a high level and possibly remotely. Recent advances in the area of autonomous surgery using AI and machine learning (ML) illustrate strong evidence for the upcoming future. However, implementing AI in surgical robotic systems presents several challenges, such as data privacy and security concerns, restricting the availability of training data. Additionally, there is a need for rigorous validation and testing to ensure AI systems are both accurate and reliable in clinical settings. Therefore, it is imperative to discuss the current challenges and approaches, as well as the feasibility, reliability, and ethical implications of AI in robotic surgery. This is the focus of this workshop.

Organizers:

Prof. Mahdi Tavakoli

Professor,

University of Alberta, Edmonton, Canada
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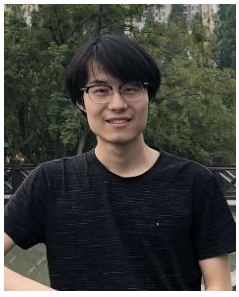

Yafei Ou

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Sadra Zargarzadeh

M.Sc. student,

University of Alberta, Edmonton, Alberta
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Speakers:

Prof. Amir Hooshiar

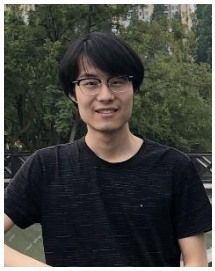
Assistant Professor,

McGill University, Montréal, Canada

Prof. Jay Carriere

Assistant Professor,

University of Calgary, Calgary, Canada



Yafei Ou

Ph.D. candidate,

University of Alberta, Edmonton, Alberta

Sadra Zargarzadeh

M.Sc. student,

University of Alberta, Edmonton, Alberta

Tentative schedule:

- 3:30 – 3.55 PM
  Talk 1 – “Title Pending”– Jay Carriere
- 3.55 – 4:20 PM
  Talk 2 – “Embedded Sensing and Sensor-free Methods for Shape and Force Estimation on Soft Interventional Robots”– Amir Hooshiar
- 4:20 – 4.30 PM
  Talk 3 – “LLMs and Their Applications in Medical Robotics” – Sadra Zagarzadeh
- 4:30 – 5.00 PM
  Talk 4 – “Surgical Task Simulation and Its Applications” – Yafei Ou