



Faculty Supervisors & AI in Medicine Summer Research Projects List

2025 T-CAIREM Summer Research Program

- **Last updated:** December 19, 2024 (This PDF will be updated as more supervisors list their summer research projects.)
- **New Listings:** Prof. Artem Babaian, Prof. Alice Kam

This list is intended for students applying for paid internships with the T-CAIREM 2025 Summer Research Program. The faculty supervisors listed in this PDF have indicated that they have one or more summer student positions available.

Applicants may also contact other supervisors not on this list to see if they are hiring summer students.

The student is responsible for arranging an internship with a supervisor before the internship starts. The application deadline for this program is January 17, 2025 at 5pm.

More information for students:

<https://tcairem.utoronto.ca/summer-research-studentships>

More information for faculty supervisors:

<https://tcairem.utoronto.ca/call-faculty-supervisors-0>

We look forward to working with the successful applicants this summer. Good luck!

For more information contact:

Zoryana Salo, Centre Administrator

Zoryana.salo@utoronto.ca • tcairem.utoronto.ca/

Temerty Centre for AI Research and Education in Medicine

T-CAIREM • 2025 Call for Faculty Supervisors: Summer Research Program #1

POTENTIAL SUPERVISOR'S INFORMATION

Name	Chris McIntosh
Phone number	(416) 634-7041
Preferred email address	chris.mcintosh@uhn.ca
Your primary university/hospital/research institution affiliation	UHN-University Health Network
Primary department you're appointed to/affiliated with	Medical Biophysics
Appointment level	- Assistant Professor
Supervisor's primary research interests	machine learning, deep learning, large language models, multimodal learning, foundational models
Website	https://mcintoshml.github.io/
Briefly describe the research that the student(s) will be involved in.	<p>Innovation doesn't happen in a vacuum. Jointly embedded at UHN and the UofT, our research brings together experts and trainees to solve impactful problems at the intersection of artificial intelligence and medicine.</p> <p>Medical domains: Our work includes a variety of data modalities (biological, wearable, structured reporting, and imaging) and critical diseases such as cancer and heart disease. We work closely with clinicians to understand and ultimately augment patient care with AI.</p> <p>AI technologies: Solving clinical problems means pushing and extending the boundaries of AI technology including semi-supervised learning, domain adaptation/model generalization, meta-learning, and multi-modal data fusion.</p>
Specific skills you're looking for in summer student(s).	pytorch, deep learning, computer vision, large language models
Primary location of research	Toronto General Hospital
Where will the student's research be conducted?	Combination of both
Supervisor Commitment	Each supervisor is expected to commit some time to assist with the delivery of the 2025 T-CAIREM summer research program. These roles may include but are not limited to, adjudicating and reviewing presentations, moderating trainee rounds, providing feedback to participants, etc.
Have you read and AGREE to the Supervisor Commitment?	Yes
T-CAIREM membership	Faculty who are new to the field of health AI research and are not members of T-CAIREM, please see the Membership section of our web site for details on becoming a member. Membership is free.
Are you a T-CAIREM member?	Yes, I'm a T-CAIREM member

T-CAIREM • 2025 Call for Faculty Supervisors: Summer Research Program #2

POTENTIAL SUPERVISOR'S INFORMATION

Name	Dan Li
Phone number	(604) 875-4111
Preferred email address	dan.li@vch.ca
Your primary university/hospital/research institution affiliation	Vancouver General Hospital
Primary department you're appointed to/affiliated with	Pathology and Laboratory Medicine
Appointment level	- Assistant Professor

Supervisor's primary research interests

AI-powered clinical genetics testing

Briefly describe the research that the student(s) will be involved in.

Chromosome analysis is the first-tier clinical genetic testing for hematologic cancers. This research aims to develop an AI model to identify a wide range of clinically important abnormalities with high accuracy. A user-friendly interphase has been built by google research powered by the AI model. De-identified metaphase images archived in the cytogenetics laboratory at Vancouver General Hospital will be inputted into the interphase for training the AI model, and parameters will be established based on our training data. The student will be involved in the training the AI model and optimize the parameters.

Specific skills you're looking for in summer student(s).

Strong computer programming skills: Unix/Linux, python etc. Knowing Cytogenetics would be an asset.

Primary location of research	Vancouver General Hospital
Where will the student's research be conducted?	Combination of both

Supervisor Commitment

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Have you read and AGREE to the Supervisor Commitment? Yes

T-CAIREM membership

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T-CAIREM • 2025 Call for Faculty Supervisors: Summer Research Program #3

POTENTIAL SUPERVISOR'S INFORMATION

Name	Lena Palaniyappan
Phone number	(519) 685-8054
Preferred email address	lena.palaniyappan@mcgill.ca
Your primary university/hospital/research institution affiliation	McGill University
Primary department you're appointed to/affiliated with	psychiatry
Appointment level	- Full Professor
Supervisor's primary research interests	psychosis, Natural language processing, computational psychiatry, machine learning, speech analysis
Website	https://douglas.research.mcgill.ca/lena-palaniyappan/
Briefly describe the research that the student(s) will be involved in.	Speech and language impairments are core characteristics of schizophrenia and other psychiatric disorders. A T-cairem summer student completed working on generating synthetic speech through finetuning a LLM on clinical interviews. we are now looking forward to furthering NLP applications of clinical psychiatric data. We focus on both content (words, sentiment, embeddings, computational linguistics) and form (phonetics, spectrograms) to answer clinically relevant questions (i.e. classification of symptoms through machine learning on speech features)
Specific skills you're looking for in summer student(s).	coding skills; preferably python ability to work with multimodal datasets NLP affinity a plus experience with clinical settings a plus.
Primary location of research	Douglas Mental health university institute, McGill university, Montreal
Where will the student's research be conducted?	Combination of both
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Have you read and AGREE to the Supervisor Commitment?	Yes
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Are you a T-CAIREM member?	Yes, I'm a T-CAIREM member

T-CAIREM • 2025 Call for Faculty Supervisors: Summer Research Program #4

POTENTIAL SUPERVISOR'S INFORMATION

Name	April Khademi
Phone number	(416) 979-5000
Preferred email address	akhademi@torontomu.ca
Your primary university/hospital/research institution affiliation	Toronto Metropolitan University
Primary department you're appointed to/affiliated with	Electrical, Computer and Biomedical Engineering
Appointment level	- Associate Professor
Supervisor's primary research interests	Medical imaging, AI, machine learning, radiology, pathology
Website	https://www.torontomu.ca/akhademi
Briefly describe the research that the student(s) will be involved in.	<ul style="list-style-type: none">- design and development of AI tools for medical imaging (radiology neuro MRI or breast cancer pathology images)- correlation of biomarkers to clinical variables- statistical analysis- publication of paper
Specific skills you're looking for in summer student(s).	Medical imaging, coding in python, AI, ML for medicine
Primary location of research	TMU
Where will the student's research be conducted?	Combination of both
Supervisor Commitment	Each supervisor is expected to commit some time to assist with the delivery of the 2025 T-CAIREM summer research program. These roles may include but are not limited to, adjudicating and reviewing presentations, moderating trainee rounds, providing feedback to participants, etc.
Have you read and AGREE to the Supervisor Commitment?	Yes
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T-CAIREM • 2025 Call for Faculty Supervisors: Summer Research Program #6

POTENTIAL SUPERVISOR'S INFORMATION

Name	Divya Sharma
Phone number	(416) 302-5048
Preferred email address	div.sharma@utoronto.ca
Your primary university/hospital/research institution affiliation	York University
Primary department you're appointed to/affiliated with	Mathematics and Statistics
Appointment level	- Assistant Professor
Supervisor's primary research interests	Deep Learning, Machine Learning, Reinforcement Learning
Website	https://divya-sharma-york.github.io

Briefly describe the research that the student(s) will be involved in.

Developing reinforcement learning (RL) models to tailor personalized medicine approaches, with a focus on mental health and liver disease outcomes. They will explore how RL can dynamically adjust treatment plans based on individual patient data, such as demographics, clinical history, and response to previous interventions. The goal is to enhance the precision of treatment recommendations by allowing the model to learn and adapt over time, ultimately improving long-term health outcomes. The work may involve analyzing multi-omics and clinical datasets, designing reward functions to optimize patient care pathways, and testing models across diverse patient populations to address healthcare disparities.

Specific skills you're looking for in summer student(s).

Python coding expertise, familiarity with machine learning and deep learning

Primary location of research	While my primary institute is York University, Toronto with additional appointment at DLSPH, meetings would be conducted over zoom
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Where will the student's research be conducted?	Remotely
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Supervisor Commitment

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Have you read and AGREE to the Supervisor Commitment?	Yes
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T-CAIREM membership

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Are you a T-CAIREM member?	Yes, I'm a T-CAIREM member
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T-CAIREM • 2025 Call for Faculty Supervisors: Summer Research Program #7

POTENTIAL SUPERVISOR'S INFORMATION

Name	Christopher Cheung
Phone number	(416) 480-4746
Preferred email address	christopher.cheung@sunnybrook.ca
Your primary university/hospital/research institution affiliation	Sunnybrook Health Sciences Centre
Primary department you're appointed to/affiliated with	Cardiology
Appointment level	- Assistant Professor
Supervisor's primary research interests	arrhythmias, cardiac electrophysiology, wearable devices, artificial intelligence, cardiac monitoring
Website	https://sunnybrook.ca/team/member.asp?t=19&page=2990&m=1047
Briefly describe the research that the student(s) will be involved in.	Analysis of ECG for arrhythmia diagnosis in patients with a variety of cardiovascular conditions, including atrial fibrillation, inherited arrhythmia syndromes. Analysis of wearable device cardiac data including handheld ECGs, photoplethysmography for arrhythmia detection.
Specific skills you're looking for in summer student(s).	Machine learning experience, particularly in working with ECGs would be preferable. We are looking to generate models to analyze/interpret the ECG to make diagnoses, along with data from wearable devices.
Primary location of research	Sunnybrook Health Sciences Centre
Where will the student's research be conducted?	Combination of both
Supervisor Commitment	Each supervisor is expected to commit some time to assist with the delivery of the 2025 T-CAIREM summer research program. These roles may include but are not limited to, adjudicating and reviewing presentations, moderating trainee rounds, providing feedback to participants, etc.
Have you read and AGREE to the Supervisor Commitment?	Yes
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T-CAIREM • 2025 Call for Faculty Supervisors: Summer Research Program #8

POTENTIAL SUPERVISOR'S INFORMATION

Name	Melanie Courtot
Phone number	(437) 246-5742
Preferred email address	mcourtot@oicr.on.ca
Your primary university/hospital/research institution affiliation	Ontario Institute for Cancer Research
Primary department you're appointed to/affiliated with	Genome Informatics
Appointment level	- Assistant Professor
Supervisor's primary research interests	Data Science, Computational Biology, Knowledge representation, Data quality and curation
Website	https://courtotlab.genomeinformatics.org/
Briefly describe the research that the student(s) will be involved in.	Student will be involved in data extraction and curation for biomedical textual reports towards submission and integration into data platforms. They may also be involved in data linkage across resources and/or data classification. Students will use combination of NLP, LLMs etc to extract structure data, enrich it eg through semantic annotations and make it suitable for submission eg into the Ontario Tumour Bank or Pan Canadian Genome Library.
Specific skills you're looking for in summer student(s).	software development skills, ability to self-manage and solve challenges. Interest in biomedical knowledge management. Familiarity with LLMs and Semantics would be a plus.
Primary location of research	OICR
Where will the student's research be conducted?	Combination of both
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Have you read and AGREE to the Supervisor Commitment?	Yes
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T-CAIREM • 2025 Call for Faculty Supervisors: Summer Research Program #9

POTENTIAL SUPERVISOR'S INFORMATION

Name	Mina Nouredanesh
Phone number	(519) 555-1212
Preferred email address	mina.nouredanesh@umanitoba.ca
Your primary university/hospital/research institution affiliation	University of Manitoba
Primary department you're appointed to/affiliated with	Department of Community Health Sciences, Max Rady College of Medicine
Appointment level	- Assistant Professor
Supervisor's primary research interests	AI for the prediction of complex age-related conditions, Free-living digital biomarkers, Longitudinal and multimodal health data analysis, Wearable technologies.
Website	https://umanitoba.ca/medicine/faculty-staff/mina-nouredanesh
Briefly describe the research that the student(s) will be involved in.	Canada's older adult population is growing rapidly, leading to an increase in complex age-related conditions (CACs) including injurious falls, Parkinson's disease symptoms (e.g., freezing of gait), and dementia-related behavioral and psychological issues. While no cures exist for these conditions, early identification of risk factors can help delay onset or mitigate their impact through targeted interventions. Dr. Nouredanesh's multidisciplinary research program leverages AI and multimodal health data to predict CACs and identify individual-level modifiable risk factors. We seek motivated students to join us and contribute to innovative research aimed at enhancing the quality of life for older adults.
Specific skills you're looking for in summer student(s).	-Prior Experience with Python (or MATLAB) and Machine Learning: Enthusiastic about utilizing Python/MATLAB and applying machine learning techniques to analyze diverse health data (e.g., tabular, time series, images), develop predictive models, and derive impactful insights. -Interested in conducting literature reviews to gather insights that enhance/guide research directions.
Primary location of research	Flexible (Remotely, In-lab: University of Manitoba)
Where will the student's research be conducted?	Remotely
Supervisor Commitment	Each supervisor is expected to commit some time to assist with the delivery of the 2025 T-CAIREM summer research program. These roles may include but are not limited to, adjudicating and reviewing presentations, moderating trainee rounds, providing feedback to participants, etc.
Have you read and AGREE to the Supervisor Commitment?	Yes
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T-CAIREM • 2025 Call for Faculty Supervisors: Summer Research Program #10

POTENTIAL SUPERVISOR'S INFORMATION

Name	Beyza Ciftci
Phone number	(519) 663-3430
Preferred email address	beyza.ciftci@lhsc.on.ca
Your primary university/hospital/research institution affiliation	Western University
Primary department you're appointed to/affiliated with	Clinical Neurological Sciences
Appointment level	- Assistant Professor
Supervisor's primary research interests	Prognostication and treatment optimization in multiple sclerosis (MS) with use of artificial intelligence (AI) modalities to improve health-related outcomes.
Briefly describe the research that the student(s) will be involved in.	<p>Multiple Sclerosis (MS) is a chronic neuroinflammatory disease that is the leading cause of non-traumatic disability due to neurological disease in young adults. The natural history of MS is characterized by marked heterogeneity which is also mirrored in the treatment options for MS. However individualized decision-making tools accounting for the multifaceted nature of MS are lacking. This study aims to use clinical and paraclinical data to construct an ML-based model addressing the heterogenous features of the disease to achieve risk stratification and aid therapeutic decision making in people with MS.</p>
Specific skills you're looking for in summer student(s).	machine learning supervised learning reinforcement learning
Primary location of research	Western University, London Ontario
Where will the student's research be conducted?	Remotely
Supervisor Commitment	Each supervisor is expected to commit some time to assist with the delivery of the 2025 T-CAIREM summer research program. These roles may include but are not limited to, adjudicating and reviewing presentations, moderating trainee rounds, providing feedback to participants, etc.
Have you read and AGREE to the Supervisor Commitment?	Yes
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Are you a T-CAIREM member?	Yes, I'm a T-CAIREM member

T-CAIREM • 2025 Call for Faculty Supervisors: Summer Research Program #12

POTENTIAL SUPERVISOR'S INFORMATION

Name	Jose Zariffa
Phone number	(416) 597-3422
Preferred email address	jose.zariffa@utoronto.ca
Your primary university/hospital/research institution affiliation	UHN-University Health Network
Primary department you're appointed to/affiliated with	Institute of Biomedical Engineering
Appointment level	- Associate Professor - TAHSN-affiliated Scientist

Supervisor's primary research interests

Rehabilitation engineering; computer vision; upper limb function; neural engineering; bioelectric signal processing.

Website

<https://bme.utoronto.ca/faculty-research/core-faculty/jose-zariffa/>

Briefly describe the research that the student(s) will be involved in.

Regaining hand function is the top priority for individuals paralyzed following cervical spinal cord injuries. Increasing the amount of high-quality rehabilitation that can be delivered at home may be crucial to improving the recovery of hand function. To this end, we are exploring the use of augmented reality (AR) systems to provide detailed feedback on hand function during interactions with real everyday objects. The student will work on implementing and benchmarking deep learning algorithms for 3D pose estimation of the hand by the AR system.

Specific skills you're looking for in summer student(s).

Previous experience applying deep learning algorithms to video data; experience with pose estimation would be ideal. Experience with VR or AR systems would be an asset.

Primary location of research	KITE Research Institute - Toronto Rehab - University Health Network
Where will the student's research be conducted?	In-lab

Supervisor Commitment

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Have you read and AGREE to the Supervisor Commitment? Yes

T-CAIREM membership

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Are you a T-CAIREM member?	Yes, I'm a T-CAIREM member
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T-CAIREM • 2025 Call for Faculty Supervisors: Summer Research Program #13

POTENTIAL SUPERVISOR'S INFORMATION

Name	Girish S. Kulkarni
Phone number	(416) 888-5214
Preferred email address	Girish.Kulkarni@uhn.ca
Your primary university/hospital/research institution affiliation	UHN-University Health Network
Primary department you're appointed to/affiliated with	Department of Surgical Oncology
Appointment level	- Full Professor
Supervisor's primary research interests	Prostate cancer, genitourinary malignancies, health services research, health policy, health disparities
Website	https://uofturology.ca/directory/faculty/kulkarni-girish/

Briefly describe the research that the student(s) will be involved in.

We are developing a population-based machine learning model to better pinpoint individuals who would most benefit from PSA screening. Following the model's creation, we will evaluate the impact of an organized prostate cancer screening strategy guided by this machine learning model on overall societal well-being and disparities using modelling approaches.

Students will have opportunities to contribute to the development of this model, including supporting observational study research, literature review, engagement with stakeholders, and other related activities.

Specific skills you're looking for in summer student(s).

- Previous research experience is an asset, namely in the areas of health equity and artificial intelligence
- Coding in Python, SAS, or STATA
- Experience with literature reviews and systematic review
- Previous experience working with community partners

Primary location of research	Toronto
Where will the student's research be conducted?	Remotely

Supervisor Commitment

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Have you read and AGREE to the Supervisor Commitment? Yes

T-CAIREM membership

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Are you a T-CAIREM member?	Yes, I'm a T-CAIREM member
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T-CAIREM • 2025 Call for Faculty Supervisors: Summer Research Program #14

POTENTIAL SUPERVISOR'S INFORMATION

Name	Clement Zai
Phone number	(416) 535-8501
Preferred email address	clement.zai@camh.ca
Your primary university/hospital/research institution affiliation	CAMH-Centre for Addiction and Mental Health
Primary department you're appointed to/affiliated with	Psychiatry
Appointment level	- Associate Professor - TAHSN-affiliated Scientist

Supervisor's primary research interests

suicide, genomics, machine-learning, epidemiology, pharmacogenetics

Website

<https://www.camh.ca/en/science-and-research/science-and-research-staff-directory/clementzai>

Briefly describe the research that the student(s) will be involved in.

The student(s) will be involved in genome-wide association studies of mental health conditions (PTSD, suicidality, and/or pharmacogenetic phenotypes) and downstream analyses. The student(s) will have opportunities to participate in a pharmacoepidemiology study related to PTSD and a machine-learning study related to suicide.

Specific skills you're looking for in summer student(s).

R language, biostatistics, have taken courses on human genetics

Primary location of research	250 College Street
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Where will the student's research be conducted?	Combination of both
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Supervisor Commitment

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Have you read and AGREE to the Supervisor Commitment? Yes

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T-CAIREM • 2025 Call for Faculty Supervisors: Summer Research Program #15

POTENTIAL SUPERVISOR'S INFORMATION

Name	Mark Boulos
Phone number	(416) 433-5653
Preferred email address	mark.boulos@utoronto.ca
Your primary university/hospital/research institution affiliation	Sunnybrook Health Sciences Centre
Primary department you're appointed to/affiliated with	Medicine (Neurology)
Appointment level	- Associate Professor - TAHSN-affiliated Scientist

Supervisor's primary research interests

sleep disorders, neurophysiology, stroke, machine learning, ambulatory sleep monitoring

Website

<https://sunnybrook.ca/research/team/member.asp?t=10&m=586&page=527>

Briefly describe the research that the student(s) will be involved in.

The Sunnybrook Sleep Laboratory collects a rich dataset of overnight polysomnography and health questionnaire data from participants who complete a sleep study. There are ~1000 sleep studies conducted per year, representing the opportunity for the generation of a large dataset that includes raw polysomnography signals, summary sleep study metrics (e.g., sleep apnea severity), health questionnaire data, and medication information. The student's role will be to develop AI algorithms to analyze this data. We hypothesize that the AI-generated algorithms will be able to successfully differentiate between different pathological states in sleep, as compared to board-certified sleep technologist scoring.

Specific skills you're looking for in summer student(s).

- Knowledge in machine learning/AI, programming, statistics, and prior research experience would be an asset
- Strong organizational skills
- Outstanding interpersonal skills
- Strong written communication skills
- Interested in studying sleep physiology and sleep disorders

Primary location of research	Sunnybrook Research Institute, Toronto, Ontario
Where will the student's research be conducted?	Combination of both

Supervisor Commitment

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Have you read and AGREE to the Supervisor Commitment? Yes

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T-CAIREM • 2025 Call for Faculty Supervisors: Summer Research Program #16

POTENTIAL SUPERVISOR'S INFORMATION

Name	Sabrina Piedimonte
Phone number	(514) 945-9340
Preferred email address	sabrina.piedimonte@gmail.com
Your primary university/hospital/research institution affiliation	University of Montreal
Primary department you're appointed to/affiliated with	Obstetrics and Gynecology
Appointment level	- Assistant Professor
Supervisor's primary research interests	Ovarian cancer Prediction of cytoreduction using AI and machine learning Predictive tools for chemoresponse
Website	https://x.com/SabrinaPiedimo1
Briefly describe the research that the student(s) will be involved in.	<p>PREDATOOR; Prediction of cytoreduction using AI designed model from intraoperative images from diagnostic laparoscopy for advanced ovarian cancer.</p> <p>This is a multicenter international collaborative study involving the prospective collection of images at the time of diagnostic laparoscopy for ovarian cancer capturing zones of carcinomatosis. Collected images will be used to train an AI model predicting complete cytoreduction at the time of primary surgery and will be used as a decision-tool to select patients for primary surgery or neoadjuvant therapy which can significantly impact survival. Model creation will be done with the Center for image Guided Surgery in Strasbourg.</p>
Specific skills you're looking for in summer student(s).	Should have an interest in improving outcomes and precision in advanced cytoreductive surgery. Prior experience with annotation softwares would be an asset. Interpersonnal skills a must as one of the main tasks will be to retrieve the images in the OR and coordinate with surgical team.
Primary location of research	Montreal and Toronto
Where will the student's research be conducted?	Combination of both
Supervisor Commitment	Each supervisor is expected to commit some time to assist with the delivery of the 2025 T-CAIREM summer research program. These roles may include but are not limited to, adjudicating and reviewing presentations, moderating trainee rounds, providing feedback to participants, etc.
Have you read and AGREE to the Supervisor Commitment?	Yes
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T-CAIREM • 2025 Call for Faculty Supervisors: Summer Research Program #17

POTENTIAL SUPERVISOR'S INFORMATION

Name	Alex Mihailidis
Phone number	(416) 428-2114
Preferred email address	alex.mihailidis@utoronto.ca
Your primary university/hospital/research institution affiliation	UHN-University Health Network
Primary department you're appointed to/affiliated with	Department of Occupational Science & Occupational Therapy
Appointment level	- Full Professor
Supervisor's primary research interests	Dr. Mihailidis conducts research in the field of pervasive computing, intelligent systems in health, and technology to support older adults
Website	https://bme.utoronto.ca/faculty-research/core-faculty/alex-mihailidis/

Briefly describe the research that the student(s) will be involved in.

The research project involves the development of multi-modal tools leveraging AI, integrated with finely tuned open-source LLMs. This innovative approach is designed to provide patients with personalized and meaningful real-time feedback during rehabilitation exercises. The system will analyze patients' performance, identifying specific issues such as posture misalignments or compensatory movements. Additionally, the system will offer motivational feedback to keep patients engaged and motivated throughout their rehabilitation sessions. This dual-focus on corrective guidance and motivational support aims to enhance the effectiveness of therapy sessions, ensuring patients not only perform exercises safely but also remain committed to their rehabilitation program.

Specific skills you're looking for in summer student(s).

Technical Proficiency in AI and Machine Learning principles and applications

Experience with LLMs such as GPT or LLAMA and their implementation.

Strong programming skills in Python are essential, especially proficiency in frameworks such as PyTorch. Experience with the Unity game engine for developing gamified applications would also be beneficial.

Primary location of research	Toronto Rehab Institute, 550 University Ave, Toronto
Where will the student's research be conducted?	Combination of both

Supervisor Commitment

Each supervisor is expected to commit some time to assist with the delivery of the 2025 T-CAIREM summer research program. These roles may include but are not limited to, adjudicating and reviewing presentations, moderating trainee rounds, providing feedback to participants, etc.

Have you read and AGREE to the Supervisor Commitment? Yes

T-CAIREM membership

Faculty who are new to the field of health AI research and are not members of T-CAIREM, please see the Membership section of our web site for details on becoming a member. Membership is free.

Are you a T-CAIREM member? Yes, I'm a T-CAIREM member

T-CAIREM • 2025 Call for Faculty Supervisors: Summer Research Program #18

POTENTIAL SUPERVISOR'S INFORMATION

Name	Maged Goubran
Phone number	(647) 234-0242
Preferred email address	maged.goubran@utoronto.ca
Your primary university/hospital/research institution affiliation	University of Toronto
Primary department you're appointed to/affiliated with	Medical Biophysics
Appointment level	- Assistant Professor - TAHSN-affiliated Scientist
Supervisor's primary research interests	Artificial Intelligence, Computer Vision, Computational Neuroscience, Neuroimaging
Website	https://aiconslab.github.io/
Briefly describe the research that the student(s) will be involved in.	The student will aid in the development of a novel 3D SSL algorithm and foundation models for medical imaging and will train it on very large image dataset that we have gathered. They will be evaluating the representations output by their SSL-trained networks on both online challenges, and real-world medical data both inside the lab and in external international collaborations.
Specific skills you're looking for in summer student(s).	computer vision, medical imaging, Pytorch, MONAI
Primary location of research	Sunnybrook Research Institute
Where will the student's research be conducted?	Combination of both
Supervisor Commitment	Each supervisor is expected to commit some time to assist with the delivery of the 2025 T-CAIREM summer research program. These roles may include but are not limited to, adjudicating and reviewing presentations, moderating trainee rounds, providing feedback to participants, etc.
Have you read and AGREE to the Supervisor Commitment?	Yes
T-CAIREM membership	Faculty who are new to the field of health AI research and are not members of T-CAIREM, please see the Membership section of our web site for details on becoming a member. Membership is free.
Are you a T-CAIREM member?	Yes, I'm a T-CAIREM member

T-CAIREM • 2025 Call for Faculty Supervisors: Summer Research Program #19

POTENTIAL SUPERVISOR'S INFORMATION

Name	Andrew Sage
Phone number	(416) 634-7701
Preferred email address	andrew.sage@uhn.ca
Your primary university/hospital/research institution affiliation	UHN-University Health Network
Primary department you're appointed to/affiliated with	UofT - Dept. of Surgery, Faculty of Medicine
Appointment level	- Assistant Professor - TAHSN-affiliated Scientist
Supervisor's primary research interests	digital twins, ex vivo organ perfusion, biomedical engineering, machine learning, time-series data forecasting
Website	https://sagelabuhn.ca/
Briefly describe the research that the student(s) will be involved in.	Digital twins are an emerging concept in medicine. Ex vivo lung perfusion (EVLP) allows for the study of human organs in isolation under physiological conditions. This method facilitates the collection of biospecimens and high-resolution, real-time data that would be challenging to obtain in patients. Consequently, EVLP offers an ideal platform for creating digital twins. Our team has developed a suite of foundational machine learning models for multi-modal digital human lungs. The selected TCAIREM Summer student will refine and validate these models, as well as assist in the prospective deployment through various clinical interventions.
Specific skills you're looking for in summer student(s).	Proficiency in Python and ML libraries (e.g., TensorFlow, PyTorch) is essential. Skills in algorithm development, data preprocessing, handling large medical datasets, time-series and data analysis (pandas, NumPy) are required. Experience in model evaluation, optimization, and basic healthcare concepts is beneficial, along with strong research skills.
Primary location of research	Toronto General Hospital
Where will the student's research be conducted?	Combination of both
Supervisor Commitment	Each supervisor is expected to commit some time to assist with the delivery of the 2025 T-CAIREM summer research program. These roles may include but are not limited to, adjudicating and reviewing presentations, moderating trainee rounds, providing feedback to participants, etc.
Have you read and AGREE to the Supervisor Commitment?	Yes
T-CAIREM membership	Faculty who are new to the field of health AI research and are not members of T-CAIREM, please see the Membership section of our web site for details on becoming a member. Membership is free.
Are you a T-CAIREM member?	Yes, I'm a T-CAIREM member

T-CAIREM • 2025 Call for Faculty Supervisors: Summer Research Program #20

POTENTIAL SUPERVISOR'S INFORMATION

Name	Shaf Keshavjee
Phone number	(416) 634-7701
Preferred email address	shaf.keshavjee@uhn.ca
Your primary university/hospital/research institution affiliation	UHN-University Health Network
Primary department you're appointed to/affiliated with	Thoracic Surgery
Appointment level	- Full Professor - TAHSN-affiliated Scientist

Supervisor's primary research interests

lung transplantation, thoracic surgery, ex vivo organ perfusion, prognostic biomarkers and algorithms

Briefly describe the research that the student(s) will be involved in.

Lung transplantation is a life-saving option for patients with end-stage lung failure, but donor shortages and low lung utilization (~20%) limit availability. Ex vivo lung perfusion (EVLV) is a novel platform that assesses donor lungs outside the body under physiological conditions, improving donor lung selection. Our team developed the InSighTx machine learning model to enhance donor lung assessment during EVLV, which is currently being tested clinically. The selected TCAIREM Summer student will develop and validate a next-generation InSighTx model that incorporates both donor and recipient features for more comprehensive assessments.

Specific skills you're looking for in summer student(s).

The successful student will have:

- Proficiency in machine learning libraries and reinforcement learning models
- Skills in algorithm development and data preprocessing
- Experience with handling large medical datasets and the understanding of healthcare concepts
- Proficiency in data analysis and experience in model evaluation and optimization

Primary location of research	Toronto General Hospital
Where will the student's research be conducted?	Combination of both

Supervisor Commitment

Each supervisor is expected to commit some time to assist with the delivery of the 2025 T-CAIREM summer research program. These roles may include but are not limited to, adjudicating and reviewing presentations, moderating trainee rounds, providing feedback to participants, etc.

Have you read and AGREE to the Supervisor Commitment? Yes

T-CAIREM membership

Faculty who are new to the field of health AI research and are not members of T-CAIREM, please see the Membership section of our web site for details on becoming a member. Membership is free.

Are you a T-CAIREM member?	Yes, I'm a T-CAIREM member
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T-CAIREM • 2025 Call for Faculty Supervisors: Summer Research Program #21

POTENTIAL SUPERVISOR'S INFORMATION

Name	Chung-Wai Chow
Phone number	(416) 340-3512
Preferred email address	cw.chow@utoronto.ca
Your primary university/hospital/research institution affiliation	University of Toronto
Primary department you're appointed to/affiliated with	Medicine
Appointment level	- Full Professor
Supervisor's primary research interests	We focus on novel technologies for lung function assessment and machine learning for interpretation of pulmonary function tests.
Website	https://chowlab.wordpress.com/
Briefly describe the research that the student(s) will be involved in.	<p>We developed and published a machine learning (ML) algorithm that uses common spirometry metrics to interpret lung function with high accuracy doi:10.1136/bmjresp-2022-001396).</p> <p>Spirometer outputs are PDF files with varying formats. This has prevented the application of our ML into routine care, and the major problem to be solved.</p> <p>The goal is to develop an app that retrieve the 6 key parameters in the spirometry report and input them into the ML algorithm for interpretation.</p> <p>The app will be tested in the Toronto General Hospital PFT Laboratory, a real world setting where 80-100 full PFTs are done weekly.</p>
Specific skills you're looking for in summer student(s).	A student with excellent coding, communications troubleshooting skills and an interest in biomedical engineering would be an ideal candidate.
Primary location of research	Toronto General Hospital
Where will the student's research be conducted?	Combination of both
Supervisor Commitment	Each supervisor is expected to commit some time to assist with the delivery of the 2025 T-CAIREM summer research program. These roles may include but are not limited to, adjudicating and reviewing presentations, moderating trainee rounds, providing feedback to participants, etc.
Have you read and AGREE to the Supervisor Commitment?	Yes
T-CAIREM membership	Faculty who are new to the field of health AI research and are not members of T-CAIREM, please see the Membership section of our web site for details on becoming a member. Membership is free.
Are you a T-CAIREM member?	Yes, I'm a T-CAIREM member

T-CAIREM • 2025 Call for Faculty Supervisors: Summer Research Program #22

POTENTIAL SUPERVISOR'S INFORMATION

Name	Christopher Witiw
Phone number	(416) 864-5060
Preferred email address	christopher.witiw@unityhealth.to
Your primary university/hospital/research institution affiliation	University of Toronto
Primary department you're appointed to/affiliated with	Neurosurgery
Appointment level	- Assistant Professor

Supervisor's primary research interests

Neurotrauma, Computer Vision

Briefly describe the research that the student(s) will be involved in.

We have developed a vision transformer model called ASIST-TBI to help clinicians determine which traumatic brain injured patients need urgent brain surgery. The student will be involved in the external validation and deployment of ASIST-TBI.

Specific skills you're looking for in summer student(s).

Strong background in python.

Knowledge of cloud-based computing.

Basic clinical knowledge of traumatic brain injury.

Primary location of research	St. Michael's Hospital
Where will the student's research be conducted?	Combination of both

Supervisor Commitment

Each supervisor is expected to commit some time to assist with the delivery of the 2025 T-CAIREM summer research program. These roles may include but are not limited to, adjudicating and reviewing presentations, moderating trainee rounds, providing feedback to participants, etc.

Have you read and AGREE to the Supervisor Commitment? Yes

T-CAIREM membership

Faculty who are new to the field of health AI research and are not members of T-CAIREM, please see the Membership section of our web site for details on becoming a member. Membership is free.

Are you a T-CAIREM member?	Yes, I'm a T-CAIREM member
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T-CAIREM • 2025 Call for Faculty Supervisors: Summer Research Program #23

POTENTIAL SUPERVISOR'S INFORMATION

Name	Michael Daly
Phone number	(416) 581-7691
Preferred email address	michael.daly@uhn.ca
Your primary university/hospital/research institution affiliation	UHN-University Health Network
Primary department you're appointed to/affiliated with	Princess Margaret Cancer Centre
Appointment level	- TAHSN-affiliated Scientist

Supervisor's primary research interests

Deep Learning-Enabled 3D Optical Imaging for Surgical Guidance,
AI-Powered Intraoperative Imaging Systems,
In Silico Training Methods for Convolutional Neural Networks

Briefly describe the research that the student(s) will be involved in.

This project will help drive the development of an innovative 3D fluorescence imaging system for cancer surgery. This intraoperative system uses state-of-the-art optical imaging and deep learning technology to quantify the depth of tumour invasion (i.e., how deep the surgeon needs to cut).

Our custom Siamese deep convolutional neural network has been validated in 3D digital models derived from oral cancer patient tumors, but as yet these assume homogeneous tissue optical properties. This work would extend this approach by optimizing the deep learning architecture for use with an in silico training process for more realistic biological tissue.

Specific skills you're looking for in summer student(s).

- Course work in mathematics / physics
- Strong programming experience (Python, MATLAB)
- Experience with deep convolutional neural networks is an asset
- Ability to research and problem solve independently
- Excellent communication skills for collaboration with a multi-disciplinary team of surgeons and engineers

Primary location of research Princess Margaret Cancer Research Tower

Where will the student's research be conducted? Combination of both

Supervisor Commitment

Each supervisor is expected to commit some time to assist with the delivery of the 2025 T-CAIREM summer research program. These roles may include but are not limited to, adjudicating and reviewing presentations, moderating trainee rounds, providing feedback to participants, etc.

Have you read and AGREE to the Supervisor Commitment? Yes

T-CAIREM membership

Faculty who are new to the field of health AI research and are not members of T-CAIREM, please see the Membership section of our web site for details on becoming a member. Membership is free.

Are you a T-CAIREM member? Yes, I'm a T-CAIREM member

T-CAIREM • 2025 Call for Faculty Supervisors: Summer Research Program #24

POTENTIAL SUPERVISOR'S INFORMATION

Name	Joel Davies
Phone number	(647) 984-9876
Preferred email address	joel.davies@sinaihealth.ca
Your primary university/hospital/research institution affiliation	University of Toronto
Primary department you're appointed to/affiliated with	Department of Otolaryngology- Head and Neck Surgery
Appointment level	- Assistant Professor
Supervisor's primary research interests	Artificial Intelligence, Robotic Surgery, Virtual Surgical Planning, Head and neck oncology
Website	https://otolaryngology.utoronto.ca/faculty/joel-davies
Briefly describe the research that the student(s) will be involved in.	<p>Predicting risk of nodal metastases in the neck from oropharyngeal cancers is critical in determining the extent of robotic/neck surgery, and patient overall survival. We would like to use pre-existing data, and collect new data, to create a large database of oropharyngeal cancers to predict, based on a variety of factors (i.e. tumor size, location, pathologic characteristics, etc), which patients may develop nodal metastases in the neck opposite from the tumor. This study has the potential to change either the extent of surgery and/or primary treatment modality.</p>
Specific skills you're looking for in summer student(s).	<p>Any potential summer student should have familiarity with basic statistical software (i.e. excel), interest in learning programming languages (i.e. python) and have some clinical interest in surgical oncology.</p>
Primary location of research	Sinai Health System
Where will the student's research be conducted?	Combination of both
Supervisor Commitment	<p>Each supervisor is expected to commit some time to assist with the delivery of the 2025 T-CAIREM summer research program. These roles may include but are not limited to, adjudicating and reviewing presentations, moderating trainee rounds, providing feedback to participants, etc.</p>
Have you read and AGREE to the Supervisor Commitment?	Yes
T-CAIREM membership	<p>Faculty who are new to the field of health AI research and are not members of T-CAIREM, please see the Membership section of our web site for details on becoming a member. Membership is free.</p>
Are you a T-CAIREM member?	Yes, I'm a T-CAIREM member

T-CAIREM • 2025 Call for Faculty Supervisors: Summer Research Program #25

POTENTIAL SUPERVISOR'S INFORMATION

Name	Enid Montague
Phone number	(657) 856-4345
Preferred email address	enid.montague@utoronto.ca
Your primary university/hospital/research institution affiliation	University of Toronto
Primary department you're appointed to/affiliated with	mechanical and industrial engineering
Appointment level	- Associate Professor
Supervisor's primary research interests	AI implementation in primary care and cardiac care
Briefly describe the research that the student(s) will be involved in.	evaluating the effects of AI scribes on communication and patient and care provider work. May involve experimental design and/ or machine learning approaches to communication analysis
Specific skills you're looking for in summer student(s).	experimental design human subjects research field work NLP
Primary location of research	toronto
Where will the student's research be conducted?	Combination of both
Supervisor Commitment	Each supervisor is expected to commit some time to assist with the delivery of the 2025 T-CAIREM summer research program. These roles may include but are not limited to, adjudicating and reviewing presentations, moderating trainee rounds, providing feedback to participants, etc.
Have you read and AGREE to the Supervisor Commitment?	Yes
T-CAIREM membership	Faculty who are new to the field of health AI research and are not members of T-CAIREM, please see the Membership section of our web site for details on becoming a member. Membership is free.
Are you a T-CAIREM member?	Yes, I'm a T-CAIREM member

T-CAIREM • 2025 Call for Faculty Supervisors: Summer Research Program #27

POTENTIAL SUPERVISOR'S INFORMATION

Name	Sushant Kumar
Phone number	(814) 321-5730
Preferred email address	sushant.kumar@uhn.ca
Your primary university/hospital/research institution affiliation	UHN-University Health Network
Primary department you're appointed to/affiliated with	Department of Medical Biophysics
Appointment level	- Assistant Professor
Supervisor's primary research interests	computational biology, machine learning, protein biophysics, genome analysis & interpretation
Briefly describe the research that the student(s) will be involved in.	Student will develop integrative machine learning framework to identify novel cancer biomarkers
Specific skills you're looking for in summer student(s).	machine learning, computer programming, prior experience with biological data analysis preferred
Primary location of research	Princess Margaret Cancer Research Tower
Where will the student's research be conducted?	Combination of both
Supervisor Commitment	Each supervisor is expected to commit some time to assist with the delivery of the 2025 T-CAIREM summer research program. These roles may include but are not limited to, adjudicating and reviewing presentations, moderating trainee rounds, providing feedback to participants, etc.
Have you read and AGREE to the Supervisor Commitment?	Yes
T-CAIREM membership	Faculty who are new to the field of health AI research and are not members of T-CAIREM, please see the Membership section of our web site for details on becoming a member. Membership is free.
Are you a T-CAIREM member?	Yes, I'm a T-CAIREM member

T-CAIREM • 2025 Call for Faculty Supervisors: Summer Research Program #28

POTENTIAL SUPERVISOR'S INFORMATION

Name	Williams Turpin
Phone number	(647) 762-5519
Preferred email address	wturpin@lunenfeld.ca
Your primary university/hospital/research institution affiliation	Mount Sinai Hospital
Primary department you're appointed to/affiliated with	Gastroenterology
Appointment level	- Assistant Professor

Supervisor's primary research interests

Microbiome

Omic

Bayesian statistics

Diet

Biomarkers

Briefly describe the research that the student(s) will be involved in.

The GEM project has recruited more than 5,000 participants since 2008. Around 120 participants have now developed Crohn's disease. In this proposal we are aiming to assess changes in dietary trajectory using group-based trajectory modeling as its association with Crohn's disease onset. Association between dietary group-based trajectory and multiomic will be tested using a general estimating equation model. Finally, trajectories of dietary changes since recruitment in the GEM project will be tested to assess variation in the developmental course of z scores for dietary patterns reflecting changes in the consumption of foods loading onto each of dietary patterns over time

Specific skills you're looking for in summer student(s).

Statistics

R software

Unix

Diet

Primary location of research	LTRI (toronto)
Where will the student's research be conducted?	Combination of both

Supervisor Commitment

Each supervisor is expected to commit some time to assist with the delivery of the 2025 T-CAIREM summer research program. These roles may include but are not limited to, adjudicating and reviewing presentations, moderating trainee rounds, providing feedback to participants, etc.

Have you read and AGREE to the Supervisor Commitment? Yes

T-CAIREM membership

Faculty who are new to the field of health AI research and are not members of T-CAIREM, please see the Membership section of our web site for details on becoming a member. Membership is free.

Are you a T-CAIREM member?	Yes, I'm a T-CAIREM member
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T-CAIREM • 2025 Call for Faculty Supervisors: Summer Research Program #29

POTENTIAL SUPERVISOR'S INFORMATION

Name	Azadeh Yadollahi
Phone number	(416) 597-3422
Preferred email address	azadeh.yadollahi@uhn.ca
Your primary university/hospital/research institution affiliation	UHN-University Health Network
Primary department you're appointed to/affiliated with	KITE-Toronto Rehabilitation Institute
Appointment level	- Associate Professor
Supervisor's primary research interests	Signal processing, machine learning, deep learning, biomedical technology development, sleep apnea, cardiorespiratory disorders
Briefly describe the research that the student(s) will be involved in.	There are multiple potential projects: 1) to develop a machine/deep learning model for predicting respiratory failure during sleep 2) to develop a computer/mobile application for analyzing and visualizing cardiorespiratory signals 3) to develop algorithms for investigating cardiopulmonary coupling of respiration during sleep
Specific skills you're looking for in summer student(s).	biomedical signal processing, machine/deep learning, time series analysis, python programming, statistical analysis
Primary location of research	KITE-Toronto Rehabilitation Institute
Where will the student's research be conducted?	Combination of both
Supervisor Commitment	Each supervisor is expected to commit some time to assist with the delivery of the 2025 T-CAIREM summer research program. These roles may include but are not limited to, adjudicating and reviewing presentations, moderating trainee rounds, providing feedback to participants, etc.
Have you read and AGREE to the Supervisor Commitment?	Yes
T-CAIREM membership	Faculty who are new to the field of health AI research and are not members of T-CAIREM, please see the Membership section of our web site for details on becoming a member. Membership is free.
Are you a T-CAIREM member?	Yes, I'm a T-CAIREM member

T-CAIREM • 2025 Call for Faculty Supervisors: Summer Research Program #30

POTENTIAL SUPERVISOR'S INFORMATION

Name	Andrea Waddell
Phone number	(705) 549-3181
Preferred email address	awaddell@waypointcentre.ca
Your primary university/hospital/research institution affiliation	University of Toronto
Primary department you're appointed to/affiliated with	Psychiatry
Appointment level	- Associate Professor
Supervisor's primary research interests	Quality improvement, patient safety, artificial intelligence, machine learning, and mental health
Website	https://psychiatry.utoronto.ca/faculty/andrea-waddell

Briefly describe the research that the student(s) will be involved in.

I am leading a research project exploring the impact of a machine learning model to predict patients at risk of an adverse event in an acute mental health setting—the first of its kind in Canada. The research team is interested in engaging a student to support the model's deployment and pilot the physician alert on two clinical inpatient units at Waypoint. Depending on the timeline, the student may be involved in developing evaluation material or supporting the evaluation to refine the model and alerting system. Students would also be encouraged to participate in dissemination of the research.

Specific skills you're looking for in summer student(s).

A summer student supporting this project, should have familiarity with data analysis, machine learning algorithms and evaluation. They should also possess problem-solving abilities, attention to detail, and an interest in healthcare applications of AI. An interest in mental health or experience with health care data are assets but not required.

Primary location of research	Remote with the possibility of a site visit at Waypoint Centre for Mental Health Care
Where will the student's research be conducted?	Remotely

Supervisor Commitment

Each supervisor is expected to commit some time to assist with the delivery of the 2025 T-CAIREM summer research program. These roles may include but are not limited to, adjudicating and reviewing presentations, moderating trainee rounds, providing feedback to participants, etc.

Have you read and AGREE to the Supervisor Commitment? Yes

T-CAIREM membership

Faculty who are new to the field of health AI research and are not members of T-CAIREM, please see the Membership section of our web site for details on becoming a member. Membership is free.

Are you a T-CAIREM member? Yes, I'm a T-CAIREM member

T-CAIREM • 2025 Call for Faculty Supervisors: Summer Research Program #31

POTENTIAL SUPERVISOR'S INFORMATION

Name	Mark Bayley
Phone number	(416) 597-3422
Preferred email address	mark.bayley@uhn.ca
Your primary university/hospital/research institution affiliation	UHN-University Health Network
Primary department you're appointed to/affiliated with	KITE - Toronto Rehabilitation Institute
Appointment level	- Full Professor

Supervisor's primary research interests

Stroke, Brain Injury, Knowledge Translation, Prognostic Factors, Health Services Research

Briefly describe the research that the student(s) will be involved in.

This project aims to advance the development of the Acute Concussion Triage Avatar (ACT-A); a multi-language, artificial intelligence (AI)-powered conversational avatar that helps capture a detailed medical and concussion history from a patient through voice conversation to effectively and efficiently identify individuals who are at the highest risk of a poor outcome post-concussion.

Students may be involved in either the front-end programming of the avatar interface, the back-end development of the large language model, sentiment analysis, and the supervised learning model for predicting outcomes from concussion; or both.

Specific skills you're looking for in summer student(s).

- Proficiency in programming languages (html, CSS, and JavaScript)
- Understanding of machine learning principles (including Large Language Models and Supervised Learning)
- Proficiency in statistical analysis
- Academic writing experience
- Problem-solving/critical thinking skills

Primary location of research	Hull-Ellis Concussion and Research Clinic, Toronto Rehabilitation Institute - UHN, Toronto, ON
Where will the student's research be conducted?	In-lab

Supervisor Commitment

Each supervisor is expected to commit some time to assist with the delivery of the 2025 T-CAIREM summer research program. These roles may include but are not limited to, adjudicating and reviewing presentations, moderating trainee rounds, providing feedback to participants, etc.

Have you read and AGREE to the Supervisor Commitment? Yes

T-CAIREM membership

Faculty who are new to the field of health AI research and are not members of T-CAIREM, please see the Membership section of our web site for details on becoming a member. Membership is free.

Are you a T-CAIREM member? Yes, I'm a T-CAIREM member

T-CAIREM • 2025 Call for Faculty Supervisors: Summer Research Program #32

POTENTIAL SUPERVISOR'S INFORMATION

Name	Depeng Jiang
Phone number	(204) 272-3137
Preferred email address	Depeng.Jiang@umanitoba.ca
Your primary university/hospital/research institution affiliation	George & Fay Yee Centre for Healthcare Innovation
Primary department you're appointed to/affiliated with	Department of Community Health Sciences
Appointment level	- Full Professor
Supervisor's primary research interests	<ul style="list-style-type: none">• Longitudinal data analysis• AI technique and machine learning approaches for health data• structural equation models
Website	https://depengjiang.github.io/
Briefly describe the research that the student(s) will be involved in.	This research project studies the links between different fracture types in older Canadians, their impact on death risk, and the factors leading to repeated fractures. Using long-term data, the team will apply advanced statistical methods to understand these connections. The goal is to improve patient care and reduce healthcare costs through better prevention and treatment strategies for osteoporosis-related fractures, ultimately enhancing life quality for seniors.
Specific skills you're looking for in summer student(s).	<ol style="list-style-type: none">1. Statistical Analysis: Proficiency in risk models and multivariate analyses.2. Machine Learning: Experience with techniques like random forests for identifying complex interactions.3. Data Handling: Skills in managing large datasets, sensitivity analyses.4. Research Communication: Ability to translate complex findings into practical, evidence-based strategies.
Primary location of research	University of Manitoba, Bannatyne Campus
Where will the student's research be conducted?	Combination of both
Supervisor Commitment	Each supervisor is expected to commit some time to assist with the delivery of the 2025 T-CAIREM summer research program. These roles may include but are not limited to, adjudicating and reviewing presentations, moderating trainee rounds, providing feedback to participants, etc.
Have you read and AGREE to the Supervisor Commitment?	Yes
T-CAIREM membership	Faculty who are new to the field of health AI research and are not members of T-CAIREM, please see the Membership section of our web site for details on becoming a member. Membership is free.
Are you a T-CAIREM member?	No, but I will register on the T-CAIREM website

T-CAIREM • 2025 Call for Faculty Supervisors: Summer Research Program #33

POTENTIAL SUPERVISOR'S INFORMATION

Name	Virginijus Barzda
Phone number	(905) 828-3821
Preferred email address	virgis.barzda@utoronto.ca
Your primary university/hospital/research institution affiliation	University of Toronto
Primary department you're appointed to/affiliated with	Chemical and Physical Sciences, UTM
Appointment level	- Full Professor
Supervisor's primary research interests	nonlinear optical microscopy for histopathology, machine learning in histopathology, AI assisted image analysis machine learning in cancer diagnostics
Website	https://www.utm.utoronto.ca/cps/people/virginijus-barzda
Briefly describe the research that the student(s) will be involved in.	The student will engage in AI-assisted analysis of multimodal nonlinear microscopy images of histopathology specimens. They will also contribute to imaging histopathology tissue using multiphoton fluorescence, second harmonic generation, and third harmonic generation microscopy. The resulting tissue images will be analyzed using machine learning algorithms to map various cell types. Additionally, the structure and texture of the extracellular matrix collagen will be mapped and compared with the cell type maps. Structural changes induced by tumors will be utilized to develop prognostic markers for cancer diagnostics.
Specific skills you're looking for in summer student(s).	programming in MATLAB and python, familiar with image analysis and AI familiar with histopathology knowledge in optics and microscopy
Primary location of research	Nonlinear microscopy laboratory, Department of Chemical and Physical Sciences, University of Toronto Mississauga, Mississauga.
Where will the student's research be conducted?	Combination of both
Supervisor Commitment	Each supervisor is expected to commit some time to assist with the delivery of the 2025 T-CAIREM summer research program. These roles may include but are not limited to, adjudicating and reviewing presentations, moderating trainee rounds, providing feedback to participants, etc.
Have you read and AGREE to the Supervisor Commitment?	Yes
T-CAIREM membership	Faculty who are new to the field of health AI research and are not members of T-CAIREM, please see the Membership section of our web site for details on becoming a member. Membership is free.
Are you a T-CAIREM member?	No, but I will register on the T-CAIREM website

T-CAIREM • 2025 Call for Faculty Supervisors: Summer Research Program #34

POTENTIAL SUPERVISOR'S INFORMATION

Name	Rob Wu
Phone number	(416) 340-4567
Preferred email address	robert.wu@uhn.ca
Your primary university/hospital/research institution affiliation	UHN-University Health Network
Primary department you're appointed to/affiliated with	Medicine
Appointment level	- Associate Professor
Supervisor's primary research interests	wearable data prediction of acute exacerbations of COPD
Briefly describe the research that the student(s) will be involved in.	using wearable data to predict exacerbations including activity, heart rate, cough frequency, audio analysis of coughs
Specific skills you're looking for in summer student(s).	machine learning python
Primary location of research	TGH
Where will the student's research be conducted?	Combination of both
Supervisor Commitment	Each supervisor is expected to commit some time to assist with the delivery of the 2025 T-CAIREM summer research program. These roles may include but are not limited to, adjudicating and reviewing presentations, moderating trainee rounds, providing feedback to participants, etc.
Have you read and AGREE to the Supervisor Commitment?	Yes
T-CAIREM membership	Faculty who are new to the field of health AI research and are not members of T-CAIREM, please see the Membership section of our web site for details on becoming a member. Membership is free.
Are you a T-CAIREM member?	Yes, I'm a T-CAIREM member

T-CAIREM • 2025 Call for Faculty Supervisors: Summer Research Program #35

POTENTIAL SUPERVISOR'S INFORMATION

Name	Jesse Chao
Phone number	(416) 480-6100
Preferred email address	jesse.chao@sri.utoronto.ca
Your primary university/hospital/research institution affiliation	University of Toronto
Primary department you're appointed to/affiliated with	Medical Biophysics
Appointment level	- Assistant Professor
Supervisor's primary research interests	cancer detection, computer vision, deep learning, computational pathology, artificial intelligence
Website	https://medbio.utoronto.ca/faculty/chao
Briefly describe the research that the student(s) will be involved in.	<p>Oral cancer (OC) is a global health concern, accounting for 3% of all cancers. Despite being potentially preventable, half of OC cases are diagnosed at advanced stages, resulting in stagnant survival rates of 30-65%. Recent advances in whole-slide imaging have enabled the use of AI in pathology. Deep learning has shown promise in pathology slide image analysis. Combining AI sensitivity with pathologist expertise could improve efficiency, accuracy, and consistency of OC detection. This project aims to develop deep learning-based tools to identify image-based features of oral cancer and pre-cancer, enhancing detection and diagnosis.</p>
Specific skills you're looking for in summer student(s).	computer vision, deep learning, pytorch, python
Primary location of research	Sunnybrook
Where will the student's research be conducted?	Combination of both
Supervisor Commitment	Each supervisor is expected to commit some time to assist with the delivery of the 2025 T-CAIREM summer research program. These roles may include but are not limited to, adjudicating and reviewing presentations, moderating trainee rounds, providing feedback to participants, etc.
Have you read and AGREE to the Supervisor Commitment?	Yes
T-CAIREM membership	Faculty who are new to the field of health AI research and are not members of T-CAIREM, please see the Membership section of our web site for details on becoming a member. Membership is free.
Are you a T-CAIREM member?	Yes, I'm a T-CAIREM member

T-CAIREM • 2025 Call for Faculty Supervisors: Summer Research Program #36

POTENTIAL SUPERVISOR'S INFORMATION

Name	Marios Fokaefs
Phone number	(514) 867-6893
Preferred email address	fokaefs@yorku.ca
Your primary university/hospital/research institution affiliation	York University
Primary department you're appointed to/affiliated with	Electrical Engineering and Computer Science
Appointment level	- Assistant Professor
Supervisor's primary research interests	software engineering health information systems big data ai deployment in medicine epidemiology
Website	https://lassonde.yorku.ca/users/mfokaefs
Briefly describe the research that the student(s) will be involved in.	Students will work on using large language models (LLMs) and generative AI to generate ad hoc customized data storage and analytics environments for epidemiological research using containers. Textual requirements will be received as input and the tools will have to extract the functional and non-functional requirement, determine the optimal software architecture, deployment and data model and generate an Infrastructure as Code script to deploy the environment. Epidemiologist will be given a web front-end for analysis, a local database and an analytics engine. Environments will correspond to a project and their state can be saved to be recovered later.
Specific skills you're looking for in summer student(s).	python programming large language models big data (NoSQL, MapReduce) software architecture cloud computing and containers
Primary location of research	York University, Markham Campus
Where will the student's research be conducted?	Combination of both
Supervisor Commitment	Each supervisor is expected to commit some time to assist with the delivery of the 2025 T-CAIREM summer research program. These roles may include but are not limited to, adjudicating and reviewing presentations, moderating trainee rounds, providing feedback to participants, etc.
Have you read and AGREE to the Supervisor Commitment?	Yes
T-CAIREM membership	Faculty who are new to the field of health AI research and are not members of T-CAIREM, please see the Membership section of our web site for details on becoming a member. Membership is free.
Are you a T-CAIREM member?	No, but I will register on the T-CAIREM website

T-CAIREM • 2025 Call for Faculty Supervisors: Summer Research Program #37

POTENTIAL SUPERVISOR'S INFORMATION

Name	Gelareh Zadeh
Phone number	(416) 634-8728
Preferred email address	gelareh.zadeh@uhn.ca
Your primary university/hospital/research institution affiliation	UHN-University Health Network
Primary department you're appointed to/affiliated with	Princess Margaret Cancer Centre
Appointment level	- Full Professor
Supervisor's primary research interests	Artificial Intelligence, Neuro-Oncology, Genomics, Molecular Biology, Radiomics, Machine Learning, Cancer Genetics, Epigenetics, Computational Biology
Website	https://www.zadehlab.com/
Briefly describe the research that the student(s) will be involved in.	Brain tumor classification and prognosis relies on histopathological examination of invasively acquired tissue, through biopsies or resections. While effective, this approach carries risks, including surgical complications. Moreover, tissue samples may not fully capture tumor heterogeneity. Recent advancements in MRI technology offer a non-invasive alternative for assessing tumor characteristics. This project aims to leverage advanced brain MRI radiomics and whole MRI sequence feature extraction, integrating machine learning algorithms to develop a predictive model that accurately classifies tumor types and assesses patient outcomes. This innovative approach promises to enhance diagnostic accuracy and personalize treatment plans, ultimately improving patient care in neuro-oncology.
Specific skills you're looking for in summer student(s).	Key skills include expertise in radiomics for analyzing features, proficiency in machine learning algorithms and statistical analysis, and programming skills in languages like Python or R for data handling. Strong critical thinking and effective communication are essential for interpreting complex data and presenting findings clearly.
Primary location of research	MaRS Discovery District, 101 College St #601, Toronto, ON M5G 1L7
Where will the student's research be conducted?	Combination of both
Supervisor Commitment	Each supervisor is expected to commit some time to assist with the delivery of the 2025 T-CAIREM summer research program. These roles may include but are not limited to, adjudicating and reviewing presentations, moderating trainee rounds, providing feedback to participants, etc.
Have you read and AGREE to the Supervisor Commitment?	Yes
T-CAIREM membership	Faculty who are new to the field of health AI research and are not members of T-CAIREM, please see the Membership section of our web site for details on becoming a member. Membership is free.
Are you a T-CAIREM member?	No, but I will register on the T-CAIREM website

T-CAIREM • 2025 Call for Faculty Supervisors: Summer Research Program #38

POTENTIAL SUPERVISOR'S INFORMATION

Name	Farshad Nassiri
Phone number	(416) 603-5679
Preferred email address	farshad.nassiri@uhn.ca
Your primary university/hospital/research institution affiliation	University of Toronto
Primary department you're appointed to/affiliated with	Surgery
Appointment level	- Assistant Professor
Supervisor's primary research interests	brain cancer, glioblastoma, meningioma, cancer genetics, epigenetics, machine learning, artificial intelligence, computational biology, clinical trials
Website	https://www.uhnresearch.ca/researcher/farshad-nassiri

Briefly describe the research that the student(s) will be involved in.

Accurate assessment of residual brain tumor tissue during surgery is crucial for ensuring complete resection and improving patient outcomes. Traditionally, this evaluation relies on the surgeon's visual inspection, which can be subjective. While techniques like fluorescence-guided surgery have been developed, they still face limitations in sensitivity and specificity. Recent advancements in machine learning and computer vision offer the potential to enhance intraoperative assessment by analyzing surgical videos for visual cues indicative of residual tumor tissue. This technology aims to provide real-time, objective feedback to surgeons, improving surgical accuracy, thereby advancing neurosurgical oncology practices.

Specific skills you're looking for in summer student(s).

A student completing this project should possess skills in computer vision and machine learning, including proficiency in programming languages like Python and R. Additionally, strong analytical and communication skills, will be essential for effectively analyzing surgical videos and presenting findings.

Primary location of research	MaRS Discovery District, 101 College St #601, Toronto, ON M5G 1L7
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Where will the student's research be conducted?	Combination of both
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Supervisor Commitment

Each supervisor is expected to commit some time to assist with the delivery of the 2025 T-CAIREM summer research program. These roles may include but are not limited to, adjudicating and reviewing presentations, moderating trainee rounds, providing feedback to participants, etc.

Have you read and AGREE to the Supervisor Commitment? Yes

T-CAIREM membership

Faculty who are new to the field of health AI research and are not members of T-CAIREM, please see the Membership section of our web site for details on becoming a member. Membership is free.

Are you a T-CAIREM member?	No, but I will register on the T-CAIREM website
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T-CAIREM • 2025 Call for Faculty Supervisors: Summer Research Program #39

POTENTIAL SUPERVISOR'S INFORMATION

Name	Christopher Sun
Phone number	(613) 562-5800
Preferred email address	sun@telfer.uottawa.ca
Your primary university/hospital/research institution affiliation	Ottawa Hospital Research Institute
Primary department you're appointed to/affiliated with	Ottawa Heart Institute/University of Ottawa
Appointment level	- Assistant Professor
Supervisor's primary research interests	Applied Machine Learning, Applied Deep Learning, Operations Research, Health Management, Health equity
Website	https://www.ottawaheart.ca/profile/sun-christopher

Briefly describe the research that the student(s) will be involved in.

The student(s) will be involved in AI-driven research projects at the University of Ottawa Heart Institute, focusing on model development and implementation. These projects include: 1) developing machine learning models to predict in-hospital cardiac arrest in collaboration with Montefiore Medical Centre and The Ottawa Hospital; 2) creating actionable AI algorithms for ECG data analysis, with a focus on risk prediction, interpretability, and personalized treatment decisions; 3) refining and applying vision-language models to detect incidental findings from cardiac CT scans for improved diagnosis and patient management; 4) cardiac operating room scheduling optimization and predictive modeling to improve system efficiency.

Specific skills you're looking for in summer student(s).

Background in Computer Science, Electrical Engineering, Industrial Engineering, Operations Research, or related fields

Strong programming skills in Python, R, or other general-purpose programming languages

Expertise in optimization and/or machine and deep learning (e.g., image recognition, NLP)

Strong communication skills and ability to work well in interdisciplinary research teams

Primary location of research	Ottawa
Where will the student's research be conducted?	Combination of both

Supervisor Commitment

Each supervisor is expected to commit some time to assist with the delivery of the 2025 T-CAIREM summer research program. These roles may include but are not limited to, adjudicating and reviewing presentations, moderating trainee rounds, providing feedback to participants, etc.

Have you read and AGREE to the Supervisor Commitment? Yes

T-CAIREM membership

Faculty who are new to the field of health AI research and are not members of T-CAIREM, please see the Membership section of our web site for details on becoming a member. Membership is free.

Are you a T-CAIREM member?	Yes, I'm a T-CAIREM member
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T-CAIREM • 2025 Call for Faculty Supervisors: Summer Research Program #40

POTENTIAL SUPERVISOR'S INFORMATION

Name	Milad Lankarany
Phone number	(416) 602-4391
Preferred email address	milad.lankarany@uhn.ca
Your primary university/hospital/research institution affiliation	UHN-University Health Network
Primary department you're appointed to/affiliated with	Biomedical Engineering
Appointment level	- Associate Professor
Supervisor's primary research interests	Neuro-AI, Computational Neuroscience, Neural Data Science
Website	https://sites.google.com/view/lnsbsp/home

Briefly describe the research that the student(s) will be involved in.

In my lab, NSBSPL, we create biophysical models to understand the brain and brain diseases (like Parkinson's disease and Epilepsy). Further, we develop sophisticated AI models to provide interpretability of those biophysical models and make them translational for clinical purposes. Since 2019 that I started my lab, we have published 45+ Scientific Journal Papers and filed 4 patents. Our lab closely collaborates with Neurologists and Neurosurgeons at the Toronto Western and Toronto General Hospitals.

Specific skills you're looking for in summer student(s).

Coding skills (with Python), Mathematics, Neuroscience

Knowledge and experience with coding Pytorch is plus.

Primary location of research	Krembil Brain Institute - Toronto Western hospital
Where will the student's research be conducted?	Combination of both

Supervisor Commitment

Each supervisor is expected to commit some time to assist with the delivery of the 2025 T-CAIREM summer research program. These roles may include but are not limited to, adjudicating and reviewing presentations, moderating trainee rounds, providing feedback to participants, etc.

Have you read and AGREE to the Supervisor Commitment? Yes

T-CAIREM membership

Faculty who are new to the field of health AI research and are not members of T-CAIREM, please see the Membership section of our web site for details on becoming a member. Membership is free.

Are you a T-CAIREM member?	Yes, I'm a T-CAIREM member
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T-CAIREM • 2025 Call for Faculty Supervisors: Summer Research Program #41

POTENTIAL SUPERVISOR'S INFORMATION

Name	Houman Khosravani
Phone number	(416) 480-6100
Preferred email address	houman@stroke.dev
Your primary university/hospital/research institution affiliation	Sunnybrook Health Sciences Centre
Primary department you're appointed to/affiliated with	Division of Neurology, Department of Medicine
Appointment level	- Assistant Professor
Supervisor's primary research interests	Our ML-lab focuses on assistive technology. We work on voice as a biomarker, and generative AI to augment sensory-loss.
Website	https://strokeinnovationlab.ca/
Briefly describe the research that the student(s) will be involved in.	AI4QI(Quality Improvement), you will be working on ML-based time-series analysis, generative AI techniques with a focus on assistive technologies, including using deep learning for audio classification in stroke and palliative care-related dysphagia. We will be developing and refining these methods as we expand our research to other patient groups. Established are data-analysis pipelines and projects have REB approval. We are interested in using generative AI to augment sensory loss caused by stroke. You will be supported by our group of talented lab members and Dr. Khosravani. Our lab is vibrant with in-person and remote gatherings, and an open-door policy.
Specific skills you're looking for in summer student(s).	<ul style="list-style-type: none">-great team player, interest in neuroscience and complexity science are welcome-interest in ML for health as applied to quality improvement-deep learning - proficiency in python, algorithms and commonly used frameworks-data science concepts, familiarity with data preprocessing, feature extraction from sources such as audio and image data
Primary location of research	Sunnybrook Health Sciences Centre
Where will the student's research be conducted?	Combination of both
Supervisor Commitment	Each supervisor is expected to commit some time to assist with the delivery of the 2025 T-CAIREM summer research program. These roles may include but are not limited to, adjudicating and reviewing presentations, moderating trainee rounds, providing feedback to participants, etc.
Have you read and AGREE to the Supervisor Commitment?	Yes
T-CAIREM membership	Faculty who are new to the field of health AI research and are not members of T-CAIREM, please see the Membership section of our web site for details on becoming a member. Membership is free.
Are you a T-CAIREM member?	Yes, I'm a T-CAIREM member

T-CAIREM • 2025 Call for Faculty Supervisors: Summer Research Program #42

POTENTIAL SUPERVISOR'S INFORMATION

Name	Anne Martel
Phone number	(416) 728-9389
Preferred email address	a.martel@utoronto.ca
Your primary university/hospital/research institution affiliation	University of Toronto
Primary department you're appointed to/affiliated with	Medical Biophysics
Appointment level	- Full Professor - TAHSN-affiliated Scientist
Supervisor's primary research interests	medical image analysis personalized medicine digital pathology radiology cancer
Website	https://martellab.com
Briefly describe the research that the student(s) will be involved in.	Development of visual-language models for diagnosis and prediction in cancer.
Specific skills you're looking for in summer student(s).	Experience in pytorch Familiarity with LLMs Good communication and writing skills
Primary location of research	Sunnybrook Research Institute, Bayview Campus
Where will the student's research be conducted?	Combination of both
Supervisor Commitment	Each supervisor is expected to commit some time to assist with the delivery of the 2025 T-CAIREM summer research program. These roles may include but are not limited to, adjudicating and reviewing presentations, moderating trainee rounds, providing feedback to participants, etc.
Have you read and AGREE to the Supervisor Commitment?	Yes
T-CAIREM membership	Faculty who are new to the field of health AI research and are not members of T-CAIREM, please see the Membership section of our web site for details on becoming a member. Membership is free.
Are you a T-CAIREM member?	Yes, I'm a T-CAIREM member

T-CAIREM • 2025 Call for Faculty Supervisors: Summer Research Program #43

POTENTIAL SUPERVISOR'S INFORMATION

Name	Nicholas Mitsakakis
Phone number	(416) 524-3843
Preferred email address	nmitsakakis@cheo.on.ca
Your primary university/hospital/research institution affiliation	Children's Hospital of Eastern Ontario Research Institute
Primary department you're appointed to/affiliated with	Clinical Research Unit
Appointment level	- Assistant Professor - TAHSN-affiliated Scientist

Supervisor's primary research interests

fairness in ML, clinical validation of AI models, threshold optimization, decision science, sample size determination

Briefly describe the research that the student(s) will be involved in.

There are increasing concerns that AI models may introduce bias and promote inequities in health care. In this project, we will first examine the conditions under which this is true, and subsequently we will use existing fairness metrics in order to design and implement optimization approaches that ensure fairness is achieved during the tuning of an AI model. While many algorithmic fairness metrics exist, we will focus on those that are relevant to healthcare, with possible modifications to increase relevance.

The methods will be evaluated using simulated data, as well as real pediatric clinical data.

Specific skills you're looking for in summer student(s).

R programming skills, previous working experience with ML, exposure to clinical/medical research, strong statistical background

Primary location of research	Children's Hospital of Eastern Ontario Research Institute
Where will the student's research be conducted?	Remotely

Supervisor Commitment

Each supervisor is expected to commit some time to assist with the delivery of the 2025 T-CAIREM summer research program. These roles may include but are not limited to, adjudicating and reviewing presentations, moderating trainee rounds, providing feedback to participants, etc.

Have you read and AGREE to the Supervisor Commitment? Yes

T-CAIREM membership

Faculty who are new to the field of health AI research and are not members of T-CAIREM, please see the Membership section of our web site for details on becoming a member. Membership is free.

Are you a T-CAIREM member?	Yes, I'm a T-CAIREM member
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T-CAIREM • 2025 Call for Faculty Supervisors: Summer Research Program #44

POTENTIAL SUPERVISOR'S INFORMATION

Name	Laleh Seyyed-Kalantari
Phone number	(647) 975-9079
Preferred email address	lsk@yorku.ca
Your primary university/hospital/research institution affiliation	York University
Primary department you're appointed to/affiliated with	Electrical Engineering and Computer Science
Appointment level	- Assistant Professor
Supervisor's primary research interests	AI fairness
Briefly describe the research that the student(s) will be involved in.	AI fairness in medical imaging or AI fairness in LLMs
Specific skills you're looking for in summer student(s).	Proficient in Python and ML Familiar with deep learning
Primary location of research	York University
Where will the student's research be conducted?	Combination of both
Supervisor Commitment	Each supervisor is expected to commit some time to assist with the delivery of the 2025 T-CAIREM summer research program. These roles may include but are not limited to, adjudicating and reviewing presentations, moderating trainee rounds, providing feedback to participants, etc.
Have you read and AGREE to the Supervisor Commitment?	Yes
T-CAIREM membership	Faculty who are new to the field of health AI research and are not members of T-CAIREM, please see the Membership section of our web site for details on becoming a member. Membership is free.
Are you a T-CAIREM member?	Yes, I'm a T-CAIREM member

T-CAIREM • 2025 Call for Faculty Supervisors: Summer Research Program #45

POTENTIAL SUPERVISOR'S INFORMATION

Name	Christopher Yao
Phone number	(416) 346-3063
Preferred email address	christophermkl.yao@uhn.ca
Your primary university/hospital/research institution affiliation	UHN-University Health Network
Primary department you're appointed to/affiliated with	Department of Otolaryngology Head and Neck Surgery
Appointment level	- Assistant Professor
Supervisor's primary research interests	HeadNeckCancer, MachineLearning, ComputerVision, DigitalHealth, Autosegmentation
Briefly describe the research that the student(s) will be involved in.	The student will be involved with AI and machine learning applications in head and neck cancer. A major focus of our group is in the ability to auto-segment oral cancers and generate imaging based surgical plans. This would facilitate the generation of a rich radiographic database and
Specific skills you're looking for in summer student(s).	Python, deep learning, multi-modal, image analysis, neural-network, contouring,
Primary location of research	University Health Network, Toronto General Hospital, Toronto
Where will the student's research be conducted?	Combination of both
Supervisor Commitment	Each supervisor is expected to commit some time to assist with the delivery of the 2025 T-CAIREM summer research program. These roles may include but are not limited to, adjudicating and reviewing presentations, moderating trainee rounds, providing feedback to participants, etc.
Have you read and AGREE to the Supervisor Commitment?	Yes
T-CAIREM membership	Faculty who are new to the field of health AI research and are not members of T-CAIREM, please see the Membership section of our web site for details on becoming a member. Membership is free.
Are you a T-CAIREM member?	Yes, I'm a T-CAIREM member

T-CAIREM • 2025 Call for Faculty Supervisors: Summer Research Program #46

POTENTIAL SUPERVISOR'S INFORMATION

Name	Amin Madani
Phone number	(416) 340-3843
Preferred email address	amin.madani@uhn.ca
Your primary university/hospital/research institution affiliation	UHN-University Health Network
Primary department you're appointed to/affiliated with	Surgery
Appointment level	- Assistant Professor
Supervisor's primary research interests	surgical AI, computer vision, machine learning, education, patient safety
Website	https://temertysimcentre.com/surgical-artificial-intelligence-research-academy-sara/

Briefly describe the research that the student(s) will be involved in.

The Surgical AI Research Academy (SARA) includes a multidisciplinary team of clinicians, engineers, computer scientists, artificial intelligence scientists, game developers, and educational psychologists. The aim of our research program is to develop and validate new technologies and methodologies to improve surgical performance. Examples include computer vision deep learning models that are capable of identifying surgical anatomy and augment surgeons' mental model, telestration tools for live on-site and remote telecoaching, intra-operative navigation and post-operative video analysis, the use of haptic devices and machine learning for performance assessment, and video games for team-training.

Specific skills you're looking for in summer student(s).

committed, hard working
a background in computer science is preferable, but not required

Primary location of research	UHN
Where will the student's research be conducted?	Combination of both

Supervisor Commitment

Each supervisor is expected to commit some time to assist with the delivery of the 2025 T-CAIREM summer research program. These roles may include but are not limited to, adjudicating and reviewing presentations, moderating trainee rounds, providing feedback to participants, etc.

Have you read and AGREE to the Supervisor Commitment? Yes

T-CAIREM membership

Faculty who are new to the field of health AI research and are not members of T-CAIREM, please see the Membership section of our web site for details on becoming a member. Membership is free.

Are you a T-CAIREM member?	Yes, I'm a T-CAIREM member
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T-CAIREM • 2025 Call for Faculty Supervisors: Summer Research Program #47

POTENTIAL SUPERVISOR'S INFORMATION

Name	Artem Babaian
Phone number	(647) 338-2936
Preferred email address	a.babaian@utoronto.ca
Your primary university/hospital/research institution affiliation	University of Toronto
Primary department you're appointed to/affiliated with	Molecular Genetics
Appointment level	- Assistant Professor
Supervisor's primary research interests	Computational Biology, Genetics, Virology, Cancer, Neurodegenerative Disease
Website	https://RNALab.ca

Briefly describe the research that the student(s) will be involved in.

Computational biology has revolutionizing our capacity to study Earth's viral biosphere. In 2020 there were 15,000 known RNA viruses, since then our lab has discovered >750,000 new species, more than everyone else in the world combined.

Now we explore the evolution, ecology, and molecular interactions of these viruses, focusing on finding the viruses which cause human disease of unknown etiology. We're searching for viruses which cause neurodegenerative disease (i.e. Alzheimer's) or human cancers. By finding these causal agents, it would be possible to develop new therapies or even Alzheimer's vaccines.

Specific skills you're looking for in summer student(s).

Required: Curiosity, Independence, Initiative.

Skill-set 1: Programming, cloud computing, front-end development, databases, statistics.

or

Skill-set 2: Microbiology, critical review, genetics, immunology, data analysis.

Primary location of research	UofT, St. George Campus
Where will the student's research be conducted?	In-lab
Supervisor Commitment	Each supervisor is expected to commit some time to assist with the delivery of the 2025 T-CAIREM summer research program. These roles may include but are not limited to, adjudicating and reviewing presentations, moderating trainee rounds, providing feedback to participants, etc.
Have you read and AGREE to the Supervisor Commitment?	Yes
T-CAIREM membership	Faculty who are new to the field of health AI research and are not members of T-CAIREM, please see the Membership section of our web site for details on becoming a member. Membership is free.
Are you a T-CAIREM member?	Yes, I'm a T-CAIREM member

T-CAIREM • 2025 Call for Faculty Supervisors: Summer Research Program #48

POTENTIAL SUPERVISOR'S INFORMATION

Name	Alice Kam
Phone number	(647) 230-3891
Preferred email address	alice.kam@uhn.ca
Your primary university/hospital/research institution affiliation	UHN-University Health Network
Primary department you're appointed to/affiliated with	Department of Medicine
Appointment level	- Assistant Professor

Supervisor's primary research interests

Education research
Knowledge translational research

Briefly describe the research that the student(s) will be involved in.

Job duties and responsibilities: work with a team of end users (learners, patients, caregivers, teachers) to create compassionate care maps and knowledge products

Required/desirable skills, education or experience:

Conduct one-on-one interviews, qualitative data analysis

Create video excerpts

Getting consents from knowledge users

Arrange focus groups

Support knowledge users (learners, patients, caregivers, teachers) to write manuscripts/ create knowledge products

Specific skills you're looking for in summer student(s).

qualitative data analysis

knowledge translation product development

Primary location of research	remote
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Where will the student's research be conducted?	Remotely
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Supervisor Commitment

Each supervisor is expected to commit some time to assist with the delivery of the 2025 T-CAIREM summer research program. These roles may include but are not limited to, adjudicating and reviewing presentations, moderating trainee rounds, providing feedback to participants, etc.

Have you read and AGREE to the Supervisor Commitment?	Yes
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T-CAIREM membership

Faculty who are new to the field of health AI research and are not members of T-CAIREM, please see the Membership section of our web site for details on becoming a member. Membership is free.

Are you a T-CAIREM member?	Yes, I'm a T-CAIREM member
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