Department of Mathematics & Computer Science
St. John's College

MATHEMATICS COLLOQUIUM

Dr. Irina Rish, Ph.D. Associate Professor in the CS and OR Department at the Université de Montréal, core faculty member of MILA - Quebec AI Institute

BRINGING ARTIFICIAL INTELLIGENCE AND NEUROSCIENCE TOGETHER

Wednesday, November 18, 2020, 5:30-6:30 PM
Location: https://sju.webex.com/meet/grabarng

Abstract: Despite its remarkable recent advances, AI is still far from achieving human-level intelligence, and making further progress in that direction may require developing fundamentally new approaches to move us from today's mostly "narrow"/task-specific AI towards a "broad"/multi-functional, continually learning and robust AI. One promising avenue of research which is believed to have a potential for revolutionizing the field is to explore more biologically - inspired mechanisms behind the human intelligence. On the other hand, introducing AI ideas, models and techniques to neuroscience, psychology and mental health can greatly benefit those fields as well. In this talk, I plan to provide an overview of several ongoing efforts on the intersection between those fields, including application of machine-learning approaches to computational psychiatry and neuroimaging, such as mental state prediction from fMRI and EEG data, dialogue generation for depression therapy, as well as using some brain-inspired models (e.g., adult neurogenesis) to advance machine-learning algorithms.

About the speaker: Irina Rish is an Associate Professor in the CS and OR Department at the Université de Montréal (UdeM) and a core faculty member of MILA. She is Canada Excellence Research Chair (CERC) in Autonomous AI and a Canadian Institute for Advanced Research (CIFAR) Canada AI Chair. She received her MSc and PhD in AI from University of California, Irvine. Dr. Rish's research focus is on machine learning, neural data analysis and neuroscience-inspired AI. Her current research interests include continual lifelong learning, optimization for deep neural networks, sparse modeling, probabilistic inference, dialog generation, biologically plausible reinforcement learning, and dynamical systems approaches to brain imaging analysis. Before joining UdeM/MILA in 2019, Irina was a research scientist at the IBM T.J. Watson Research Center, where she worked on various projects at the intersection of neuroscience and AI and led the Neuro-AI challenge. She received multiple IBM awards, including IBM Eminence & Excellence Award, IBM Outstanding Innovation Award in 2018, IBM Outstanding Technical Achievement Award in 2017, and IBM Research Accomplishment Award in 2009. Dr. Rish holds 64 patents, has published over 90 research papers, several book chapters, three edited books, and a monograph on Sparse Modeling.