PhD and Masters (thesis research) positions in the CL2 group, University of Waterloo

Dated: 15-May-2022

The Control, Learning and Logic (CL2) group at ECE, University of Waterloo, has multiple open positions for:

1) **PhD students** (PhD-W2023) for Winter 2023
2) **MASc students** (MASc-W2023) for Winter 2023

Overview of positions: The positions will focus on problems at the intersection of control theory and machine learning, with applications to autonomous or semi-autonomous systems, especially in the automotive domain. Based on the research interests and background of the candidates, the research may focus on topics such as supervisory control of ML-based decision-making systems, safe reinforcement learning, bridging the simulation-to-reality gap in learning-based control, correct-by-construction synthesis of ML-based controllers, testing and verification of autonomous systems, etc. Successful candidates are also expected to publish (and present) their research at top conferences and journals.

Required Qualifications:
- Strong mathematical foundations in linear algebra, optimization, and probability, along with an interest in dynamical systems and simulation and control of dynamical systems.
- Proficiency in programming with Python.
- **For PhD students:** Masters (or in exceptional cases, a Bachelors) degree in Systems and Control, Machine Learning, Robotics, Mathematics, Computer Science, or a related area.
- **For MASc students:** Bachelors degree in Engineering, Mathematics, Computer Science or a related area.

Additional qualifications:
Plus-points if you have one or more of the following skills (please highlight/list them in your cover letter):
- Knowledge of C++
- Familiarity with Matlab
- Experience with deep learning packages in Python (such as Tensorflow, Pytorch, Keras)
- Experience with optimization packages such as Casadi, CVX, Yalmip etc.
- Experience with Control toolboxes such as MPT 3+
- Experience with the Robot Operating System (ROS)
- Experience working with Autonomous Vehicle (AV) simulators such as Carla, LGSVL and Webots.
- Experience with AV software stacks as Apollo or Autoware.
- Experience with Formal Verification and Testing tools such as Storm, VerifAI, S-Taliro etc.

Instructions for MASc and PhD candidates:
Once you submit your application, please email yash.pant@uwaterloo.ca with your CV, transcripts (unofficial is fine), and a few lines on how your background and research interests align with ours. *Important:* Use the position code PhD-W2023 or MASc-W2023 to start the email's subject line.

Please see https://uwaterloo.ca/graduate-studies-postdoctoral-affairs/future-students/programs/electrical-and-computer-engineering-phd-waterloo for application details, and https://uwaterloo.ca/research/find-and-manage-funding/apply-funding/building-budget/recommended-salary-rates for information on salary and benefits.