Xuning (Jenai) Yang

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Education

Expected May 2017 — **Carnegie Mellon University** M.S. in Robotics
Supervisors: Dr. N. Michael, Dr. K. Sreenath

May 2015 — **University of Toronto** B.A.Sc. in Engineering Science with Honours
Major in Aerospace Engineering, Minor in Robotics and Mechatronics
Thesis: Control with Complex Specifications for a Flip Maneuver of a Quadrotor Helicopter
Supervisor: Dr. M. Broucke

Professional Experience

Aug 2015 – Present — **Robotics Institute, Carnegie Mellon University** Pittsburgh, PA, USA
Student Researcher

My research focuses on improving user efficiency by concurrent online estimation of user intent and online adaptation based on user performance for teleoperating aerial and ground robots.

- Design trajectory-based teleoperation via parameterized motion primitives
- Design and implement user intent prediction via online estimation of user reward function
- Design a novel adaptive action sampling strategy to augment user performance

May 2015 – Aug 2015 — **Rapyuta Robotics Ltd.** Zürich, Switzerland; Tokyo, Japan
Control Engineering Intern

- Simulated, implemented and tested an aggressive quadrotor hover-to-hover flip maneuver using a parameterized open-loop trajectory
- Implemented and tested an iterative learning scheme for improving real-time flip performance
- Designed, implemented and tested indoor landing algorithm for aerial vehicles using splines
- Implemented calibration packages to rectify vehicle marker to center of mass transformation

May 2014 – Aug 2014 — **Autonomous Systems and Biomechatronics Lab, University of Toronto** Toronto, Canada
Student Researcher

- Implemented OctoMap for 3D mapping with Microsoft Kinect
- Developed constraints and parameters for classification of traversable terrains in an intelligent robot learning system for realtime terrain categorization

May 2013 – Aug 2014 — **IBM Canada Ltd.** Markham, Canada
Software Developer, Release Engineering

- Design, developed and tested the *Open Source Dependency Extraction* framework in Java to identify open source code and security vulnerabilities in product codebase.

Publications

X. Yang, K. Sreenath, N. Michael, "A Framework for Efficient Teleoperation via Online Adaptation". In *Int. Conf. Robot. Auton. (ICRA)*, Sep. 2017. [Submitted]

S.C.C. Shih, I. Barbulovic-Nad, X.Yang, R. Fobel, and A.R. Wheeler, "Digital microfluidics with impedance sensing for integrated cell culture and analysis". In *Biosensors and Bioelectronics*. Oct. 2013, 42, 314-320. [pdf]

Skills

Systems Linux/Unix
Languages MATLAB, Python, C++, C, Java
Software ROS, Git, NumPy, SciPy, SIMULINK, LaTeX.
Courses Linear/Nonlinear Systems, Kinematics Dynamics and Control, Machine Learning, Planning Execution and Learning, Statistical Learning