Xuning Yang

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Education

Expected May 2017	**Carnegie Mellon University** M.S. in Robotics Supervisors: Dr. Nathan Michael, Dr. Koushil 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. Mireille Broucke

Professional Experience

Aug 2015 – Present

Robust Adaptive Systems Lab, 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 ON, 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 ON, 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, A. Agrawal, K. Sreenath, N. Michael, "System-Agnostic Adaptive Teleoperation for High-Dimensional Systems". In *Special Issue on Learning for Human-Robot Collaboration, Autonomous Robots*. [Submitted]

X. Yang, K. Sreenath, N. Michael, "A Framework for Efficient Teleoperation via Online Adaptation". In *Proceedings of 2017 IEEE International Conference on Robotics and Automation (ICRA)*, Singapore. May 2017. [Accepted]

X. Yang, K. Sreenath, N. Michael, "Online Adaptive Teleoperation via Incremental Intent Modeling". In *Proceedings of the Companion of the 2017 ACM/IEEE International Conference on Human-Robot Interaction (HRI'17)*, Vienna, Austria. Mar. 2017. pp. 329–330 [pdf]

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, vol. 42, pp. 314–320. [pdf]

Activities

Spring 2017	Teaching Assistant, 16-299 Introduction to Feedback Control Systems, Carnegie Mellon University
2016 – 2017	Class Representative, RoboOrg (Robotics Student Organization), Carnegie Mellon University
2013 – 2015	Executive Chair, Galbraith Society, University of Toronto

Skills

Systems	Linux/Unix
Languages	Matlab, Python, C++, C, familiar with Java
Software	ROS, Git, LaTeX.