TONY X. LIN

Curriculum Vitae

Education

2018–present **PhD, Robotics**, *Georgia Institute of Technology*, Atlanta, GA.
Miniature Autonomous Blimps, Machine Learning and Deep Learning, Swarming

2016–2018 : **M.S., Computer Engineering**, *University of Virginia*, Charlottesville, VA.
Multi-agent control, LiDAR-based SLAM

2012–2016 : **B.S., Mechanical Engineering**, *University of Virginia*, Charlottesville, VA.

Publications

Journal Articles

2020 Esen Yel, Tony X Lin, and Nicola Bezzo. Computation-aware adaptive planning and scheduling for safe unmanned airborne operations. *Journal of Intelligent & Robotic Systems*, volume 100, pages 575–596. Springer, 2020.

2020 Said Al-Abri, Tony X Lin, Molei Tao, and Fumin Zhang. A derivative-free optimization method with application to functions with exploding and vanishing gradients. *IEEE Control Systems Letters*, volume 5, pages 587–592. IEEE, 2020.

Conference Papers

2020 Tony X Lin, Qiuyang Tao, and Fumin Zhang. Planning for fish net inspection with an autonomous osv. In *2020 International Conference on System Science and Engineering (ICSSE)*, pages 1–5. IEEE, 2020.

2020 Tony X Lin, Daniel M Lofaro, and Donald A Sofge. Cooperative emergent swarming through deep reinforcement learning. In *2020 IEEE 16th International Conference on Control & Automation (ICCA)*, pages 1354–1359. IEEE, 2020.

2020 Tony X Lin, Samuel Coogan, Donald A Sofge, and Fumin Zhang. Set-based state estimation of mobile robots from coarse range measurements. In *2020 IEEE Conference on Control Technology and Applications (CCTA)*, pages 404–409. IEEE, 2020.

2020 Tony X Lin, Said Al-Abri, Samuel Coogan, and Fumin Zhang. A distributed scalar field mapping strategy for mobile robots. In *2020 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*, pages 11581–11586. IEEE, 2020.

2018 Esen Yel, Tony X Lin, and Nicola Bezzo. Self-triggered adaptive planning and scheduling of uav operations. In *2018 IEEE International Conference on Robotics and Automation (ICRA)*, pages 7518–7524. IEEE, 2018.

School of Electrical and Computer Engineering – Georgia Institute of Technology
(434) 249-6016 • tlin339@gatech.edu • Website
Github Linkedin

2018 Tony X Lin, Esen Yel, and Nicola Bezzo. Energy-aware persistent control of heterogeneous robotic systems. In *2018 Annual American Control Conference (ACC)*, pages 2782–2787. IEEE, 2018.

2017 Esen Yel, Tony X Lin, and Nicola Bezzo. Reachability-based self-triggered scheduling and replanning of uav operations. In *2017 NASA/ESA Conference on Adaptive Hardware and Systems (AHS)*, pages 221–228. IEEE, 2017.

2017 Mahmoud Elnaggar, Jason D Hiser, Tony X Lin, Anh Nguyen-Tuong, Michele Co, Jack W Davidson, and Nicola Bezzo. Online control adaptation for safe and secure autonomous vehicle operations. In *2017 NASA/ESA Conference on Adaptive Hardware and Systems (AHS)*, pages 101–108. IEEE, 2017.

Research Experience

Georgia Institute of Technology

August, 2018 – present ***Pursuing research related to facilitating monocular-vision based localization for miniature autonomous blimps***.

Developing deep learning models for inferring camera poses from monocular images to support autonomous flight control of miniature autonomous blimps.

Advisor : **Dr. Fumin Zhang and Dr. Samuel Coogan**, *Professor, School of Electrical and Computer Engineering* and *Assistant Professor, School of Electrical and Computer Engineering*, Atlanta, GA

Naval Research Laboratory

May, 2018 – present ***Development of novel miniature autonomous blimp control methodologies and range-based localization strategies***.

Exploration of various physical blimp structures and dynamics and Ultra-wideband(UWB) based relative localization strategies for swarms

Advisor : **Donald A. Sofge**, *Distributed Autonomous Systems Group Lead, Naval Research Laboratory*, Washington, D.C.

University of Virginia

May, 2016 – May, 2018 ***Multi-agent control and LiDAR-based SLAM for quadrotors and UGVs***.

Design and development of multi-agent control methods for solving task allocation problems and performing LiDAR-based mapping of an underground tunnel.

Advisor : **Dr. Nicola Bezzo**, *Assistant Professor, Department of Engineering System & Environment*, Charlottesville, VA

Service

2020 **Student Volunteer for ACC 2020**, Denver, CO.

2020 **Georgia Tech Decision and Control Laboratory Website Manager**, Atlanta, GA.

2019-2021 **Reviewer for International Conference on Intelligent Robotics and Systems**.

2018-2020 **Reviewer for International Conference on Robotics and Automation**.

2018-2020 **Reviewer for American Control Conference**.

2019 **Reviewer for Conference on Control Technology and Applications**.

Teaching Assistantship

Fall, 2017 : **SYS6581: Autonomous Mobile Robots**, University of Virginia.

Spring, 2015 : **ECE2660: Digital Logic Design**, University of Virginia.