Tairan Liu *January 21, 1990*

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Baton Rouge, LA • U.S.A.

Education

Louisiana State University — Baton Rouge, LA, U.S.A.
Ph.D. Candidate — *Expected Dec 2019*
Control System and Engineering, Department of Mechanical and Industrial Engineering

University of Science and Technology of China — Hefei, Anhui, P.R.China
Bachelor of Natural Science — *July 2012*
Theoretical and Applied Mechanics, Department of Modern Mechanics

Professional Experience

Louisiana State University — Baton Rouge, LA, U.S.A.
Research Assistant — *July 2016 – Present*
- Aerial Robotic Network for Agricultural Applications

Teaching Assistant — *August 2014 – May 2016*
- Machine Design Lab
- Autonomous Vehicles

University of Science and Technology of China — Hefei, Anhui, P.R.China
Research Assistant — *July 2012 – January 2013*
- UUV Electronic System, Remote Control, and Data Transmission

Undergraduate Research Assistant — *March 2011 – July 2012*
- Bionic UUV Design, Test, and Data Processing

Research Interests

- Multi-Agent System
- Lyapunov-Based Nonlinear Control
- Robotics

Skills

Hardware: Arduino, Raspberry Pi, STM32 FC, NodeMCU, XBee, GPS, etc.

Software: XCTU, QT, Microsoft Office, TeXstudio, Inkscape, AutoCAD, etc.

Programming Languages: Python, MATLAB/Simulink, C, C++ (*associated with GUI design with QT*) .

Natural Languages: Chinese (*mother tongue*) and English.

Others: HPC (*Philip@LSU, SuperMike-II@LSU, QB2@LONI*), LaTeX.

Graduate Level Courses

- Advanced Mechanical Systems Control
- Introduction to Modern Control Theory
- Advanced Linear Systems
- Advanced Topics in Control
- Industrial Robotics
- Topics in Modern System Science
- Advanced Engineering System Dynamics
- Sensors and Actuators

- Numerical Methods in Applied Mechanics
- Advanced Vibrations
- Intelligent Control and Applications in Power Systems

Research Experience

Louisiana State University — Baton Rouge, LA, U.S.A.

Aerial Robotic Network for Agricultural Applications — *July 2016 – Present*

Multi-Agent System Formation Control — *July 2016 – Present*

Computational Molecule Synthesis — *October 2015 – March 2016*

Multi-rotor Copter in Agriculture — *Februrary 2015 – June 2015*

University of Science and Technology of China — Hefei, Anhui, P.R.China

Four-Tail Fin UUV — *August 2011 – January 2013*

Black Ghost Knife Fish UUV — *November 2011 – June 2012*

Double-Tail Fin UUV — *November 2011 – June 2012*

Flow Around Circular Cylinders — *October 2011 – November 2011*

New Bionic Actuators — *April 2011 – August 2011*

Publications

Journal Papers

3. Limeng Pu, Misagh Naderi, **Tairan Liu**, Hsiao-Chun Wu, Supratik Mukhopadhyay, and Michal Brylinski. etoxpred: a machine learning-based approach to estimate the toxicity of drug candidates. *BMC Pharmacology and Toxicology*, 20(1):2, 2019
2. Pengpeng Zhang, Marcio de Queiroz, Milad Khaledyan, and **Tairan Liu**. Control of directed formations using interconnected systems stability. *Journal of Dynamic Systems, Measurement, and Control*, 141(4):041003, 2019
1. **Tairan Liu**, Misagh Naderi, Chris Alvin, Supratik Mukhopadhyay, and Michal Brylinski. Break down in order to build up: decomposing small molecules for fragment-based drug design with e molfrag. *Journal of chemical information and modeling*, 57(4):627–631, 2017

Conference Paper

1. **Tairan Liu**, Marcio de Queiroz, Pengpeng Zhang, and Milad Khaledyan. Directed formation control of n planar agents with distance and area constraints. In *2019 Annual American Control Conference (ACC)*, Philadelphia, PA, Jul 2019. to appear

Conference Poster

1. **Tairan Liu**, Misagh Naderi, Supratik Mukhopadhyay, and Michal Brylinski. Decomposing small molecules for fragment-based drug design with emolfrag, February 2018