

Yu Zheng

2000 Levy Avenue, Tallahassee, FL, US 32304
850-345-3952, zyby170412@gmail.com

EDUCATION

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| Florida State University (FSU) Ph.D. Candidate, Electrical Engineering, GPA 4.0/4.0 <ul style="list-style-type: none">• Core Courses: Robust control, Nonlinear control, Signal and System Analysis, Compressed sensing, Intro to Analysis | From 2019, Florida, US |
| Huazhong University of Science and Technology (HUST) M.E. Naval Architecture and Ocean Engineering, GPA 3.69/4.0 <ul style="list-style-type: none">• Core Courses: Digital Control Technology, Robot Manipulating Technology, Ship Hydraulic Control Technology.• Dissertation: <i>Research on Emergency Control Technique for Large-Scale AUV</i> | 2017-2019, Wuhan, China |
| Wuhan University of Technology (WHUT) B.E. Marine Engine, GPA 3.04/4.0 <ul style="list-style-type: none">• Core Courses: Calculus, Probability Theory & Statistics, Application of Microcomputer in Marine automation system. | 2013-2017, Wuhan, China |

RESEARCH EXPERIENCE

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| 1. Real-world tracking using single camera <ul style="list-style-type: none">• (AI-track-at-sea competition)• Detection: Real-time detection algorithm (YOLO)• Camera Transformation: Quadratic-learning• Data interpolation: Kernel regression | 2020.9 - 2020.12, Florida, US |
| 2. IMU Dead reckoning <ul style="list-style-type: none">• Lie-algebraic unscented Kalman filter design• CNN-based noise adaptor design | 2020.9 – present, US |
| 3. Moving-horizon resilient estimation <ul style="list-style-type: none">• L1 observer design against false data injection attacks• Data-driven algorithm design for precision improvement of binary localization results• Stability analysis for moving-horizon estimation (MHE) Relative Papers: <ul style="list-style-type: none">• Y. Zheng, OM Anubi, Attack-Resilient Weighted L1 Observer with Prior Pruning, American Control Conference (ACC 2021) | 2020.3 – present, US |
| 4. Attack-resilient path-tracking control for wheeled mobile robot <ul style="list-style-type: none">• Stable Lyapunov path-tracking controller for non-holonomic wheeled mobile robot• Optimal False data injection attack design• Attack-resilient unscented Kalman filter Relative Papers: <ul style="list-style-type: none">• Y. Zheng, OM Anubi, Attack-resilient observer pruning for path-tracking control of Wheeled Mobile Robot, ASME Dynamic Systems and Control Conference (DSCC 2020) | 2019.12-2020.3, US |
| 5. Design and Experiment of Large Scale Autonomous Unmanned Submarine <ul style="list-style-type: none">• Control algorithm design: real-time diagnostic expert system with fault tree analysis• Software develop: Finite state machine-based software architecture design, VxWorks with embedded C language• Mechatronic system design: mechanical-hydraulic-electrical-gas systems Relative Papers: <ul style="list-style-type: none">• Y. Zheng, G. X. Wang, et al. A Finite State Machine Based Diagnostic Expert System of Large-Scale Autonomous Unmanned Submarine, in IEEE International Conference on Underwater System Technology (USYS), 2018 | 2017-2019, Wuhan, China |

SKILLS AND INTERESTS

Tool skills: MATLAB/Simulink, Python, Embedded C, VxWorks
Interests: Dynamics and Control, Intelligent autonomous system, Resilient state estimation

ACADEMIC ACTIVITIES

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| Research assistant – Florida State University <ul style="list-style-type: none">• Center for Advanced Power systems• Center for Intelligent, System, Control, and Robotics | 2019-present, US |
| Reviewer – American control conference <ul style="list-style-type: none">• Review paper for 2021 ACC | 2020, Wuhan, China |

AWARDS

- Third Academic Scholarship, Huazhong University of Science and Technology, 2017/2018
- Third prize of school Scholarship, Wuhan University of Technology, 2016
- Merit student in College, Wuhan University of Technology, 2015
- Outstanding individual in volunteer service, Wuhan University of Technology, 2014