Yuxuan Fang

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Education

Huazhong University of Science and Technology *Wuhan, China*

B.Eng. in Electrical Engineering *Sept 2018 - Jun 2022*

- Major in Electrical Engineering and its Automation - Power Electronics and Electric Drive.
- Graduated with GPA 3.81/4.0.

University of Michigan - Ann Arbor *Ann Arbor, USA*

MSE in Electrical Engineering *Sept 2022 - Present*

- Major in Control Systems Track
- **Courses:** EECS 460: Control Systems Analysis and Design, EECS 560: Linear Systems Theory, EECS 566: Discrete Event Systems (FA 2022); EECS 562: Nonlinear Systems and Control, EECS 565: Linear Feedback Control Systems (WN 2023); AEROSP 590: Directed Study (Advisor: Prof. Max Z. Li, SP-SM 2023); EECS 562: Hybrid Control, EECS 501: Probability and Random Process. (FA 2023)
- Current GPA 4.0/4.0.

Publications

Brief Talk about Application of Matrix Control in Industrial Automation *Published*

Techniques of Automation and Applications *Mar 2021*

- Designed a PLC-SCADA system design regarding bag precipitators cleaning with STEP-7 and WinCC.
- Reduced the complexity by cutting the number of the timer from $m \times n$ to 2. Thus increased the reusability and extensibility of the system.
- Please review `bit.ly/CNKI-FYX` for English abstract.

The Optimization of Control Logic Based on Abrasion-Averaging Model *Published*

Techniques of Automation and Applications *Nov 2021*

- Designed a pump station based on PLC-SCADA architecture with STEP-7 and WinCC.
- Managed the oprations of the pumps as equally intensively as possible according to the water level. Avoided idle or long-run damage.
- Please review `bit.ly/CNKI_2-FYX` for English abstract.

Stealthy and Private Trajectories through Plausible Deniability *In Review*

IEEE Transactions on Intelligent Transportation Systems *Oct 2023*

- Introduced the plausible deniability concept for UAV transport systems. Formally estimated plausibly reachable zone and ranked privacy score.
- **Second** author. Majorly responsible for the plausible deniability analysis in the partially unobservable scenario.
- The pre-print version is available on `arXiv.org`.

Projects

Communication of a Magnetic Bearing Control System and its Upper System Design *Bachelor's Thesis*

Huazhong University of Science and Technology *Dec 2021 - May 2022*

- Upon a DSP-based magnetic bearing system, designed a customized communication protocol including package data paradigm, necessary data processing operations, details to utilize UDP protocols, etc.
- Composed a GUI and its APIs with Python, which smoothly controls the system and visualizes the communications information.

Plausible Deniability and Privacy Analysis in the Drone Package Delivery Systems *Master's Directed Study*

University of Michigan - Ann Arbor *May 2023 - Aug 2023*

- Continuity of the previous plausible deniability analysis. The trajectory is only partially observable.
- A spline-based Bézier curve approximation and a privacy scoring method were designed for plausible deniability quantification.
- A corresponding journal paper on IEEE T-ITS is now in review.

Work Experience

Nanjing Electrical Engineering & Technology Co., Ltd HTC *Nanjing, China*

Intern at Department of Engineering *Jul 2020 - Aug 2020*

- Designed a PLC-SCADA system for the pump station with STEP-7 and WinCC, which organizes the system well.
- Pubished a paper based on the design in Nov. 2021.

Miscellaneous

Computer Skills Python, MATLAB, C/C++, SQL, Mathematica, Mark Down, LaTeX, Microsoft Office.

Honor Society Electee of Tau Beta Pi and Eta Kappa Nu. Anticipated to be an active member since Dec 2023.