Zeyuan WANG

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Education

Degree	Institute	Major	GPA/Rank	Year
Ph.D.	University of Paris-Saclay Université d'Evry, IBISC (Prof. Mohammed Chadli) University of Duisburg-Essen (Prof. Dr.-Ing. Steven X. Ding)	Control Engineering	-	2022-present
Master / Engineer	University Paris-Saclay CentraleSupélec	Aeronautical Engineering	4.33/4.33	2018-2022
Master of Engineering	Beihang Univeristy* (Prof. Yuan Su, Prof. Yihua Cao)	System Engineering	top 5%	2019-2022
Bachelor of Science		Information and Computing Science	top 5%	2015-2019

*formerly as Beijing University of Aeronautics and Astronautics

Experience

- **Icam - Grand Paris Sud** *Feb 2025 - Jun 2025*
  Teaching Assistant Lieusaint, France
  – Teaching assistant of Automatic Control (engineer student).
- **University of Duisburg-Essen** *Sep 2024 - Dec 2024*
  Visiting Ph.D. Student. Supervisor: Prof. Dr.-Ing. Steven X. Ding Duisburg, German
- **University Paris-Saclay** *Oct 2022 - Present*
  Ph.D. Student, Teaching Assistant. Supervisor: Prof. Mohammed Chadli Evry, France
  – Teaching assistant of Automatic Control (master), Cooperative Systems (bachelor).
  – Co-supervisor of M2 project.
- **Institute of Automation, Chinese Academy of Sciences** *Apr 2021 - Jun 2022*
  Assistant Engineer of Control and Simulation Beijing, China
  – Working in Decision, Command and System Intelligence Group. Responsible for the flight control algorithm design, software communication topology design, and guidance law identification of missile simulation based on the Digital Combat Simulation (DCS) flight platform. Nonlinear control law, gain scheduling, and controller switching strategy were used to achieve high maneuverability. Manufacture of a prototype based on Raspberry to switch between different control modes.
  – Developed by C++ and Qt, using Zmq (UDP/TCP) and Protobuf/JSON protocol for inter-subsystem communication.
  – **Champion of the Intelligent Air Combat Competition** (2021, AVIC Institute of Radio Electronics, Shanghai, China)
- **Beihang University (Beijing University of Aeronautics and Astronautics)** *Sep 2020 - Jan 2021*
  Teaching assistant - Automation Beijing, China
  – Teaching for tutorial sessions. (150 students)
- **University Paris-Saclay - CentraleSupélec** *Dec 2019 - Jun 2020*
  Teaching assistant - Quantum Physics Gif-sur-Yvette, France
  – Teaching for tutorial sessions, exercise proposals/corrections. (25 students)
- **Ningbo Zhoushan Port Co., Ltd** *Jul 2018 - Aug 2018*
  Assistant of Safety Supervisor (Internship) Zhoushan, China
  – Assistant of the safety supervisor for the construction of Waidiao Island Wharf in Zhoushan Islands, Zhejiang Province.

Projects

- **Distributed Event-Triggered Fault-Tolerant Control of Multi-Agents Systems under Constraints** *Oct 2022 - Present*
  Ph.D. thesis
  – The academic subject considers the event-triggered control problem for multi-agent systems under constraints. The communication aspect is considered from a theoretical point of view of the quality of data exchanges between agents; the packet losses and delays will be particularly taken into account. The investigated event-triggered controller should be able to accelerate the speed of convergence in the presence of packet losses, delays, and sensor/actuator faults for cooperative agents, and also guarantee the energy saving of each agent when possible. The extension of fault tolerant control works to a class of nonlinear MAS (such as Linear Parameter Varying, T-S/qLPV) will be also considered.
- **Research on Flight Control Strategy of Coaxial Compound High-speed Helicopter** *Aug 2020 - Jun 2022*
  Master's graduation Project
  – Establish the six-degree-of-freedom nonlinear model of a high-speed helicopter in order to analyze its stability and dynamic characteristic. Aiming at the redundant control problem, the adaptive differential evolution algorithm was implemented to solve the trim problem and improve the flight performance. Eigen-structure placement method for inner-loop design and nonlinear control theory for outer-loop design (such as adaptive control, ADP, MPC, RL) were used to design control laws in order to perform flight missions (trajectory tracking) with high-efficient control allocation strategy.
  – One article published (SCI): Su, Y., Wang, Z., Cao, Y., 2023. A hybrid trim strategy for coaxial compound helicopter. Proceedings of the Institution of Mechanical Engineers, Part G: Journal of Aerospace Engineering 237, 452–466.
- **Robot Car Competition** *Mar 2021 - May 2021*
  Course project

– Design and manufacture of an autonomous robot car based on LEGO EV3 + Mecanum wheels. Responsible for implementation of control algorithm (cascaded PID) and navigation strategy (indoor positioning system + inertial guidance) to finish a specific trajectory.

- **High Performance Aircraft Modeling** *Sep 2020 - Dec 2020*
  Course project
  – Research on the flight modeling of F-16A attacker, a linearization model was obtained to study the stability, longitudinal and lateral mode characteristics.
- **Robot Embedded Development** *Nov 2019 - Jun 2020*
  Semester project
  – Design and manufacture of a robot that can solve the Rubik's Cube in 5 seconds. Developed by Raspberry, Python and OpenCV. 3D printing technology was used.
- **Machine Learning Project** *Nov 2019 - Feb 2020*
  Course project
  – Game ranking and mail classification prediction project. Bases on python and pandas module, using PCA to analyze the data set. Support vector machines, neural networks (tensorflow, keras), CatBoost were used and a final rank of 20/100 was obtained.
- **Aircraft Design** *Nov 2019 - Nov 2019*
  Course project
  – Design of a 4-seat fixed-wing light aircraft using the software of a French company OAD. Responsible for reverse engineering, aircraft stability analysis, and parameter adjustment.

Technical Skills

- **Programming Languages**: MATLAB (Simulink), Python, C/C++, Lua. Experienced in embedded systems (Ubuntu, Raspberry, Arduino).
- **Tools and Frameworks**: Office software, VS, Qt, SolidWorks, Onshape, Latex. SDK development in XPlane.
- **Languages**: English (IELTS 7.5, 2020), French (TCF C1, 2018), Mandarin (native).

Publications

[1] Z. Wang, M. Chadli, and S. X. Ding, 'A dynamic event-triggered approach for observer-based formation control of multi-agent systems with designable inter-event time', Systems & Control Letters, vol. 195, p. 105970, Jan. 2025, doi: 10.1016/j.sysconle.2024.105970.

[2] Z. Wang and M. Chadli, 'A Virtual Actuator and Sensor Approach for Event-Triggered Fault-Tolerant Control of Multi-Agent Systems∗,' IFAC-PapersOnLine: 12th IFAC Symposium on Fault Detection, Supervision and Safety for Technical Processes (SAFEPROCESS), vol. 58, no. 4, pp. 282–287, Jan. 2024, doi: 10.1016/j.ifacol.2024.07.231.

[3] Z. Wang and M. Chadli, 'Distributed Joint Fault Estimation for Multi-Agent Systems via Dynamic Event-Triggered Communication', IEEE Control Systems Letters, vol. 8, pp. 868–873, 2024, doi: 10.1109/LCSYS.2024.3405390 (oral presentation in 2024 64th IEEE Conference on Decision and Control, Milan, Italy).

[4] Z. Wang and M. Chadli, 'Observer-based distributed dynamic event-triggered control of multi-agent systems with adjustable interevent time', Asian J. Control, vol. 26, no. 6, pp. 2783–2795, 2024, doi: 10.1002/asjc.3385.

[5] Z. Wang and M. Chadli, 'Distributed Observer-Based Dynamic Event-Triggered Control of Multi-Agent Systems with Adjustable Inter-Event Time', in 2023 62nd IEEE Conference on Decision and Control (CDC), Singapore, Singapore: IEEE, Dec. 2023, pp. 2391–2396. doi: 10.1109/CDC49753.2023.10383670.

[6] Z. Wang and M. Chadli, 'Improved Dynamic Event-Triggered Consensus Control for Multi-Agent Systems with Designable Inter-Event Time*', in 2023 31st Mediterranean Conference on Control and Automation (MED), Limassol, Cyprus: IEEE, Jun. 2023, pp. 818–823. doi: 10.1109/MED59994.2023.10185702.

[7] Z. Wang and M. Chadli, 'Dynamic event-triggered control for multi-agent systems with adjustable inter-event time: a moving average approach', in Premier Congrès Annuel de la SAGIP, Marseille, France, May 2023. doi: 10.36227/techrxiv.23043713.v1.

[8] Y. Su, Z. Wang, and Y. Cao, 'A hybrid trim strategy for coaxial compound helicopter', Proceedings of the Institution of Mechanical Engineers, Part G: Journal of Aerospace Engineering, vol. 237, no. 2, pp. 452–466, Feb. 2023, doi: 10.1177/09544100221103021.

Academic Activities

- Reviewer for international journals and conferences: Automatica, IEEE Transactions on Fuzzy Systems, IEEE Systems Journal, The Journal of The Franklin Institute, Systems and Control Letters, Asian Journal of Control, Applied Artificial Intelligence, American Control Conference, European Control Conference, IEEE Conference on Decision and Control, etc.
- Session Co-Chair: IEEE-MED'2023-Cyprus

Honors And Awards

- **Scholarship of Chinese Scholarship Council (CSC)**, The Government of China *2022-2026*
- **Excellent Graduate**, Beijing City *2022*
- **Best Graduation Thesis**, Beihang University *2022*
- **Scholarship of Excellent Academic**, Beihang University *2020,2021*
- **Excellent Graduate**, Beihang University *2019*