



Jianye Xu

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I am currently a PhD student in the Cyber-Physical Mobility Team at the Chair of Embedded Software, RWTH Aachen University, Germany. My research focuses on learning- and optimization-based methods for multi-agent decision-making and their application to connected and automated vehicles.

Education

now	Chair of Embedded Software, RWTH Aachen University
2023-04	PhD in Autonomous Driving
2022-09	Institute of Automatic Control, RWTH Aachen University
2020-10	MSc in Automation Engineering
2020-08	Faculty of Mechanical Engineering, RWTH Aachen University
2019-10	BSc (exchange student) in Mechanical Engineering
2019-09	School of Mechanical Engineering, Beijing Institute of Technology
2016-10	BSc in Vehicle Engineering

Projects & Experiences

2024-06	Workshop Co-Organizer @ IEEE IV 2024
2024-06	<ul style="list-style-type: none">› Co-organizer of the “1st Workshop on Small-Scale Testbeds for Connected and Automated Vehicles and Robot Swarms,” held on June 2 at the IEEE Intelligent Vehicles Symposium (IV) 2024 in Jeju, South Korea› Workshop Website: 🔗
2022-09	MSc Thesis @ Cyber-Physical Mobility Group (RWTH Aachen University)
2022-03	<ul style="list-style-type: none">› Title: Parallel Priority-Based Trajectory Planning with Safety Guarantees for Networked Vehicles› Aim: Enable real-time and safe parallel trajectory planning for networked and autonomous vehicles› Grades: 1.0/1.0; GitHub: 🔗; Demo video: 🔗
2022-02	Lab Tasks @ Cyber-Physical Mobility Group (RWTH Aachen University)
2021-10	<ul style="list-style-type: none">› Task: MPC-based optimization of platoon formulation for mobile robots› GitHub: 🔗
2022-02	Project Tasks –Machine Learning in Industrial Control Engineering @ Institute of Automatic Control (RWTH Aachen University)
2021-11	<ul style="list-style-type: none">› Tasks: Given raw sensor data, train data-driven machine learning models (support vector machine, gaussian process, neural network) for MPC-based control of a rolling machine and design virtual sensors (Kalman filter, extended Kalman filter) to close the control loop› Grade: 17 points out of 18
2022-02	Seminar on Control Engineering @ Institute of Automatic Control (RWTH Aachen University)
2021-11	<ul style="list-style-type: none">› Aim: Provide a wide range of controller design methods; cultivate the ability to acquire new control methods from literature independently› Topics: Parameter space design; control of distributed parameter systems; machine learning control; fuzzy control; feedforward control; self-tuning control

2021-08	Control Laboratory @ Institute of Automatic Control (RWTH Aachen University)
2021-04	
2021-06	Lab Process Automation @ Chair of Information and Automation Systems for Process and Material Technology (RWTH Aachen University)
2021-05	
2017-10	Undergraduate Teaching Assistant @ School of Mechanical Engineering (Beijing Institute of Technology)
2017-09	

- **Aim:** Deepen knowledge from control theory through independently designing controllers and implement them on real-life applications
- **Tasks:** Control of quarter vehicle and inverse pendulum; modelling, identification and control of three-tank system
- **Aim:** Familiarize the concepts and programming languages of industrial control systems and practice their practical applications
- **Tasks:** Solve a complex process control task in a pumping station: structure the plant automation; design and implement the safety functions; decide the process sequence based on the execution specification
- **Task:** Give digital design training lectures on a CAD software to freshmen



Awards & Honors



- 2023-01 | **Dean's List (top 5% in the academic year 2021/2022)** | Honored by RWTH Aachen University
- 2022-09 | **MSc with distinction (GPA 1.2/1.0)** | Honored by RWTH Aachen University
- 2021-11 | **German National Scholarship** | Awarded by RWTH Aachen University
- 2021-06 | **Patent: Quick Locking and Unlocking Device for Vehicle-Mounted Power Battery Box (first inventor, publication number: CN 111086379 B)** | Authorized by China National Intellectual Property Administration
- 2020-11 | **German National Scholarship** | Awarded by RWTH Aachen University
- 2020-06 | **Outstanding Graduate (GPA 91.48/100, top 5%)** | Honored by Beijing Institute of Technology
- 2018-11 | **China National Scholarship** | Awarded by the Ministry of Education of the People's Republic of China
- 2018-06 | **Second Prize in National Student Mechanical Product Digital Design Competition** | Awarded by China Mechanical Discipline Steering Committee
- 2017-12 | **Outstanding Undergraduate** | Honored by Beijing Institute of Technology
- 2017-12 | **First Prize in Beijing Student Engineering Design Expression Competition** | Awarded by Beijing Municipal Commission of Education
- 2017-07 | **First Prize in National Student Drafting and Modelling Innovation Competition** | Awarded by China Cartographic Association

Skills

Programming	MATLAB/Python (advanced), C/C++ (intermediate)
Data Analysis	Pandas, Matplotlib, Scikit-learn
Web Design	JavaScript/TypeScript/VUE3/HTML/CSS (intermediate)
CAD	SolidWorks/Inventor (advanced), Siemens NX (intermediate)
Language	Chinese (native), English/German (proficient)
Soft Skills	Enthusiasm for learning, teamwork, commitment
Others	Simulink/LATEX/Git/Inkscape (advanced), ROS/Docker/Linux (intermediate)

Licenses & Certifications

- 2023-01 | **Fundamentals of Reinforcement Learning (certificate )** | authorized by University of Alberta, Alberta Machine Intelligence Institute | offered through Coursera
- 2022-11 | **Object-Oriented Data Structures in C++ (certificate )** | authorized by University of Illinois at Urbana-Champaign | offered through Coursera
- 2021-10 | **Introduction to TensorFlow for Artificial Intelligence, Machine Learning, and Deep Learning**

- (certificate  | authorized by DeepLearning.AI | offered through Coursera
- › 2021-10 | **Neural Networks and Deep Learning** (certificate  | authorized by DeepLearning.AI | offered through Coursera