

Jianye Xu

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EDUCATION

RWTH Aachen University

MSc in Automation Engineering (graduated with distinction)

Aachen, Germany

Oct 2020 – Sep 2022

- **GPA:** 1.2/1.0 (corresponds to 3.8/4.0)
- **Specialization:** Control engineering, robotics, machine learning

RWTH Aachen University

Exchange student in the final year of undergraduate studies in Mechanical Engineering

Aachen, Germany

Oct 2019 – Jul 2020

- **GPA:** 1.5/1.0 (corresponds to 3.5/4.0)

Beijing Institute of Technology

BSc in Vehicle Engineering (graduated with distinction)

Beijing, China

Aug 2016 – Sep 2019

- **GPA:** 92/100 (corresponds to 3.7/4.0, top 5%)

PROJECTS & EXPERIENCE

Cyber-Physical Mobility Group, RWTH Aachen University

Master Thesis Project (contributed to project GROKO-Plan ↗)

Aachen, Germany

Mar 2022 – Sep 2022

- **Title:** Parallel Priority-Based Trajectory Planning with Safety Guarantees for Networked Vehicles
- **Aim:** Enable parallel trajectory planning for networked control systems
- **Involved methods:** Model Predictive Control (MPC), graph-based trajectory planning, motion primitives, reachability analysis, graph partitioning algorithm, ROS communication
- **Grade:** 1.0/1.0. **GitHub:** ↗ . **Demo video:** ↗ .

Cyber-Physical Mobility Group, RWTH Aachen University

Lab Task – Control and Perception in Networked and Autonomous Vehicles ↗

Aachen, Germany

Oct 2021 – Feb 2022

- **Task:** MPC-based optimization of platoon formulation for mobile robots
- **GitHub:** ↗

Institute of Automatic Control, RWTH Aachen University

Project Task – Machine Learning in Industrial Control Engineering

Aachen, Germany

Nov 2021 – Feb 2022

- **Task:** 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

Institute of Automatic Control, RWTH Aachen University

Seminar on Control Engineering

Aachen, Germany

Nov 2021 – Feb 2022

- **Aim:** As a supplementary deepening of control theory: 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; control allocation; multi-agent systems

Institute of Automatic Control, RWTH Aachen University

Control Laboratory

Aachen, Germany

Apr 2021 – Aug 2021

- **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; identification and control of three-tank system

School of Mechanical Engineering, Beijing Institute of Technology Beijing, China
Training Program: Innovation Entrepreneurial Practice Project *Dec 2018 – Jan 2020*

- **Aim:** Increase comprehensive quality such as awareness of innovation, practical ability, and scientific literacy through supervisor's detailed guidance on the career planning, academic development, ideological and psychological development
- **Outcome:** Successfully applied for a patent, see Google Patents ↗ (grad: 91/100, top 3%)

School of Mechanical Engineering, Beijing Institute of Technology Beijing, China
Undergraduate Teaching Assistant *Sep 2017 – Oct 2017*

- **Task:** Give digital design training lectures on a CAD software to freshmen

AWARDS & HONORS

2021 | **German National Scholarship** | Awarded by RWTH Aachen University
 2021 | **Patent: Quick Locking and Unlocking Device for Vehicle-Mounted Power Battery Box**
 (see Google Patents ↗) | Authorized by China National Intellectual Property Administration
 2020 | **German National Scholarship** | Awarded by RWTH Aachen University
 2020 | **Outstanding Undergraduate** | Honored by Beijing Institute of Technology
 2018 | **China National Scholarship** | Awarded by Ministry of Education of the People's Republic of China
 2018 | **Second Prize in National Student Mechanical Product Digital Design Competition** |
 Awarded by China Mechanical Discipline Steering Committee
 2017 | **Outstanding Student** | Honored by Beijing Institute of Technology
 2017 | **First Prize in Beijing Student Engineering Design Expression Competition** | Awarded by
 Beijing Municipal Commission of Education
 2017 | **Second Prize in Engineering Drafting Skills Competition** | Awarded by Beijing Institute of
 Technology
 2017 | **First Prize in National Student Drafting and Modelling Innovation Competition** | Awarded
 by China Cartographic Association

SKILLS

Programming: MATLAB/Python (advanced), C/C++/JavaScript/HTML/CSS (intermediate)
CAD: SolidWorks/Inventor (advanced), Siemens NX (intermediate)
Soft skills: Teamwork, Problem-solving, Self-motivation
Languages: Chinese (native), English/German (proficient)
Others: Simulink/L^AT_EX/Inkscape/Git (advanced), ROS/Docker/Linux/video editing (intermediate)

LICENSES & CERTIFICATIONS

2022 | **Object-Oriented Data Structures in C++ (certificate ↗)** | authorized by University of Illinois
 at Urbana-Champaign | offered through Coursera
 2021 | **Introduction to TensorFlow for Artificial Intelligence, Machine Learning, and Deep
 Learning (certificate ↗)** | authorized by DeepLearning.AI | offered through Coursera
 2021 | **Neural Networks and Deep Learning (certificate ↗)** | authorized by DeepLearning.AI | offered
 through Coursera