

MENGZHEN LI

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RESEARCH PROFILE

Computer Science graduate with a research background in intelligent control, neural networks, and autonomous UAV systems. Co-author of a conference publication on neural network-based UAV flight control, with hands-on experience in algorithm development, simulation, and software implementation. Research interests include robotics, autonomous systems, and machine learning for intelligent control.

EDUCATION

B. S. in Computer Science and Technology

Xiamen University Tan Kah Kee College (TKKC), China

Jun. 2026

Thesis: Design of a Dual-Quadrotor UAV Flight Control System Based on Fuzzy Neural Networks

Relevant Coursework: Data Structures & Algorithms, Operating Systems, Computer Networks, Database Systems, Artificial Intelligence, Probability & Statistics

SKILLS

Programming: Python, C++, C, C#, SQL

AI & Control: PyTorch, PID Control, Fuzzy Control

Simulation & Development: Visual Studio, Visual Studio Code, MATLAB/Simulink

3D & Interactive Development: Unreal Engine 5, Unity, Cocos Creator

RESEARCH & PROJECT EXPERIENCE

Intelligent Control & UAV Research

Sep. 2022 – Present

Research Assistant | Key Laboratory of Intelligent Control and Unmanned Systems

- Developed a **fuzzy CPSO-BP neural network PID control algorithm** for a dual-quadrotor UAV flight-control system. Simulation results showed an 83.2% reduction in overshoot (18.5% to 3.1%), a 68.1% reduction in settling time (1.41 s to 0.45 s), and an 89.4% reduction in steady-state error (0.85° to 0.09°) compared with conventional PID.
- Further developed a dual-quadrotor UAV flight-control system and built a **software visualization platform** to present the control process and simulation results as part of my bachelor's thesis.
- Collaborated with the hardware team on system testing and validation.

UE5 Educational Game Development

Sep. 2024 – Dec. 2024

Product Manager & Developer

- Developed a 3D educational game for children aged 6–12 using **Unreal Engine 5**.
- Coordinated a student team across design, art, and programming, while managing project requirements and development progress.
- Contributed to 3D scene construction, gameplay mechanics, UI interaction, and testing through the final development stage.

Playable Demo: <https://kanicarp.itch.io/kitchen-memory-explorer>

“Gu Yun Jiu Xiang” Agricultural Digitalization System
Student Innovation Project

Oct. 2024 – Oct. 2025

- Developed a C# desktop prototype for local specialty fruit wine online sales and warehouse management.
- Conducted requirement analysis, system design, core- function development and internal project coordination.
- Implemented customer online- purchase functions and administrator- side inventory- management modules, and performed system testing and validation.

UAV Ground Station & Simulation Software

Oct. 2025 – Sep. 2026

University-level Innovation & Entrepreneurship Program

- Participated in developing the dual-quadrotor UAV intelligent control system and corresponding ground- station software, including simulation, software implementation, testing, system integration and documentation.

PUBLICATIONS

J. Xia, B. Jiang and **M. Li**, "Design of a Fuzzy CPSO-BP Neural Network PID Control Algorithm for a Dual-Quadcopter UAV System," 2025 5th International Conference on Artificial Intelligence, Robotics, and Communication (ICAIRC), Xiamen, China, 2025, pp. 544-547, doi: 10.1109/ICAIRC68035.2025.11385183.

AWARDS & HONORS

- Distinguished Graduate, Xiamen University Tan Kah Kee College, 2026
- Outstanding Youth in Industry-University-Research Innovation, 2025
- Second Prize, Huashu Cup National Mathematical Modeling Competition, 2025
- Second Prize, MCM/ICM Asia-Pacific Mathematical Modeling Competition, 2025
- Third Prize, Fujian Provincial Artificial Intelligence Innovation Competition, 2025
- Completion Certificate, G-Bits Network Technology (Xiamen) GameJam Challenge, 2024
- First-Class Academic Scholarship, 2022-2023
- Second-Class Academic Scholarship, 2023–2024