Curriculum Vitae

Personal Information

Name: Liangyi Ma
Email: 2023213824@bupt.cn
University: Beijing University of Posts and Telecommunications (QUST-FC)
Year: Class of 2023

Major: Digital Media Technology
QM Student ID: 231236818
GPA: 3.74 / 4.0 (**Rank: 9/59, Top 15%**)
Language Proficiency: IELTS 6.5

Education

Relevant Courses: Introduction to AI (Path Planning, Frontier Exploration), Programming Fundamentals, Java Programming, Data Science & Mathematics, Probability & Statistics, Mathematical Modeling, Game Engine Fundamentals.

Technical Skills

◎Programming Languages: Python, Java, C

◎Algorithms & Systems:

Understanding of core autonomous robot navigation pipelines (SLAM, Frontier Exploration, Path Planning).

Knowledge and application of algorithms including A* and Simulated Annealing.

Experience in developing and implementing logic within the Unity simulation environment.

◎Tools: Git

◎Core Strengths: Mathematical modeling, logical thinking, and the ability to translate theoretical algorithms into practical solutions.

Project & Competition Experience

◎Short-Term Project: UAV System Design and Development

Participated in the hands-on development of a small UAV system. Gained a concrete understanding of robotic system architecture, fueling a strong interest in autonomous navigation systems.

◎Higher Education Press Cup Mathematical Modeling Competition – Core Member / Algorithm & Report Lead

Modeled and solved a crop planting strategy optimization problem by employing the Simulated Annealing algorithm.

Independently handled the end-to-end process from data preprocessing and algorithm implementation to results analysis and visualization.

Demonstrated robust problem decomposition and algorithmic application skills.

◎VR-based Immersive Virtual Costume Museum – Development Contributor

Implemented specific interactive modules and scene logic using C# in the Unity engine.

Gained practical experience in feature implementation, debugging, and integration within a complex system framework.

◎Winter Hack 2026 Selection Challenge - Robotic Frontier Exploration Strategy Design

Focused on frontier exploration strategy design within the provided Python simulation framework.

Developed and implemented a decision-making function that balances the robot's pose, goal direction, and path cost for efficient exploration in unknown environments.

Applied theoretical knowledge of path planning and optimization algorithms to a practical robotic navigation task.

Self-Assessment

◎Enthusiastic about robotics, with a solid foundation in mathematics and proven programming capabilities.

◎ A quick learner and adapter, able to rapidly grasp new tools and concepts within projects to deliver effective solutions.