JUNQI LU

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[Github](#) ⋄ [Google Scholar](#) ⋄ [My blog](#)

EDUCATION

Beijing Institute of Technology, Beijing, China   2024.9 - 2026.6 (expected)
Second Bachelor's Degree in Computer Science | GPA: 3.2/4.0 (**Rank 1/27**)

- Achieved the top rank in a highly condensed two-year curriculum focused on fundamental computer hardware and software courses (e.g., Data Structures, Operating Systems, Computer Architecture).

Beijing Institute of Technology, Beijing, China   2020.10 - 2024.6
Bachelor of Mathematics and Applied Mathematics | GPA: 2.8/4.0

- Gained a solid theoretical background in mathematics, which underpins my quantitative and analytical skills.

- Demonstrated problem-solving abilities through participation in the Mathematical Contest in Modeling (MCM), earning **Meritorious Winner** and **Finalist awards**.

PUBLICATIONS

[1] **Junqi Lu**, Bosen Liu, Cuicui Pei, Qingan Qiu*, and Li Yang*. Learning to optimize termination decisions under hybrid uncertainty of system lifetime and task duration. *Computers & Industrial Engineering*, 2025. [DOI: 10.1016/j.cie.2025.111208](#) (**Published, IF=6.5, JCR Q1**)

[2] **Junqi Lu**, Qingan Qiu*. Learning-driven Condition-based Termination Decisions with Degradation Modeling. (**Manuscript in preparation**).

RESEARCH EXPERIENCE

Reinforcement Learning & Embodied AI   2025.7 - Present
Research Assistant | Advisor: [Prof. Xin Li](#), [Deep Reinforcement Learning Lab](#), Beijing Institute of Technology

- Focused on applying **Reinforcement Learning** and **Diffusion Policies** to embodied intelligence.

- Deployed and replicated a diffusion policy on a small-scale robotic arm, gaining hands-on experience in embodied system deployment.

- Expected to produce a final undergraduate thesis for my second degree and contribute to a conference paper from this research.

Reliability Engineering Analysis   2023.6 - 2025.6
Research Assistant | Advisor: [Prof. Qingan Qiu](#), Beijing Institute of Technology

- Developed a **Markov Decision Process (MDP)** framework to model and solve task termination problems for safety-critical systems under hybrid uncertainty.

- Conducted extensive numerical simulations and analyses, leading to a published JCR Q1 paper. The research further served as my undergraduate thesis, which was awarded the **"Excellent Thesis" prize**.

- Currently authoring a second manuscript on Learning-driven Condition-based Termination Decisions with Degradation Modeling, with an expected submission date in late 2025.

SELECTED COMPETITIONS

Mathematical Contest in Modeling (MCM)   February 2025
Finalist | **Top 1.96% of 27,456 teams worldwide**

- Modeled the ecological impact of converting forests to farmland by developing dynamic Lotka-Volterra models for nitrogen cycling.

- Innovatively constructed a differential equation model of the nitrogen cycle in the ecosystem, integrating both biological and inorganic components into a single model.

- Provided a comparative analysis of agricultural yield, biodiversity, and sustainability, offering practical recommendations for conservation and land use.

- All source code and paper drafts are publicly available on GitHub: [MCM-ICM-2025-E-Nitrogen-Cycling-Model](#).

Mathematical Contest in Modeling (MCM)   February 2023
Meritorious Winner | **Top 9% of 20,858 teams worldwide**

- Developed a series of mathematical models, including a *Soil-Water Model* and an *Improved Population Lotka-Volterra Model*, to predict plant community viability under drought conditions.

- Provided insights into the composition of drought-resistant plant communities for sustainable land-use planning.

RELEVANT COURSEWORK

- **Computer Science**: Data Structures and Algorithms, Operating System, Object-Oriented Programming, Machine Learning Fundamentals, Computer Networks.

- **Mathematics**: Real Analysis, Abstract Algebra, Probability Theory and Mathematical Statistics, Partial Differential Equation, General Topology.

- **Advanced Topics**: Reinforcement Learning (Graduate-Level).

SKILLS

Technical Skills

- **Programming**: Extensive experience in **C++**, including Object-Oriented Programming (OOP) and system development on Linux (e.g., [a real-time multiplayer chatroom](#)). Skilled in **Python** with expertise in scientific computing (*NumPy, Matplotlib*) and machine learning (*PyTorch*).

- **Tools & Software**: Proficient with **Git** for version control, managing a research portfolio and two personal blogs: an [English blog](#) for documenting recent academic work, and a [Chinese blog](#) with **over 20 articles** on Data Structures and Algorithms, accumulating **20K+ views**.

- **Academic**: Highly experienced with **LaTeX** for all academic writing. Familiar with **Manim** for visualizations and **Lean 4** for formal proof verification.

INTERESTS

- **Running**: Dedicated long-distance runner with an annual mileage consistently exceeding 1,000 km for three years. My Personal Best(PB) for half-marathon is 1:41:34, demonstrating discipline and perseverance.

- **Music**: Lead guitarist and bassist in two university rock bands. A dedicated rock music enthusiast with a passion for classic rock bands like The Beatles and KISS, showcasing creativity and teamwork.

SUMMARY

- An interdisciplinary researcher with a strong dual-degree background in Mathematics and Computer Science, graduating at the top of a highly condensed CS program (**Rank 1/27**).

- Possesses a proven research record with a published **JCR Q1** paper and a second manuscript in preparation.

- Gained hands-on research experience in two distinct areas: reliability engineering analysis and the application of reinforcement learning and diffusion policies to embodied intelligence.

- Demonstrated exceptional problem-solving and analytical skills through high-level competitions, earning **MCM Finalist** (Top 1.96%) and **Meritorious Winner** awards.