

# JUNQI LU

[GitHub](#) — [Google Scholar](#) — [Personal Blog](#)

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Beijing, China

## EDUCATION

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**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

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[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

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**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

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**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

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- **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

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### 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

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- **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

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- 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.