# YANQING LU

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## EDUCATION

**University of Southern California** Jan 2024–Dec 2025 (Expected)
*Master of Science in Computer Science* GPA: 4.0/4.0

**Southern University of Science and Technology** Aug 2019–Jun 2023
*Bachelor of Science in Mathematics and Applied Mathematics* GPA: 3.68/4.0

- Weighted Average Score: 89/100 (top 30%)
- Awards: Excellent Freshman Scholarship, *Special Award*; Merit Student Scholarship, *3rd Class*; Excellent Graduation Thesis

## PUBLICATIONS

**Lu**, **Y.**, Zhang, M., & Tang, M. (2023). Caching for edge inference at scale: A mean field multi-agent reinforcement learning approach. *GLOBECOM 2023-2023 IEEE Global Communications Conference*, 332–337.

## RESEARCH

**Automatic Base Station Deployment via Deep Reinforcement Learning** Feb 2024–May 2024

- Designed and implemented a PPO-based algorithm to determine the locations of multiple base stations in an urban area.
- Achieved over **95%** of the coverage of the optimal base station locations with less than **10%** of the time cost compared to exhaustive search.

**Mean Field Multi-Agent Reinforcement Learning Based Edge Caching** Jul 2022–May 2023

- Developed a mean field multi-agent reinforcement learning framework and implemented a mean field Actor-Critic (MFAC) approach to optimize neural network model caching in a large-scale edge intelligence system.
- Conducted extensive simulations to investigate the performance of MFAC, demonstrating the superiority of cooperative agents over competitive agents.

## INTERNSHIP

**Baixing.com** Sep 2023–Dec 2023
*Software Development Engineer Intern* Shanghai, China

- Developed a chatbot orchestration system by integrating a large language model (LLM) with a state machine for intent recognition, enabling the chatbot to follow predefined processes in conversations.
- Successfully resolved recurring LLM service outages through improvements to the API key distribution system.

## PROJECTS

**Bird Calls Identification in Soundscapes** May 2024

- Constructed a ResNet-18 for classifying bird species based on soundscapes, achieving an accuracy of **85%** across 264 species.
- Explored the relation between model structure and dataset features by comparing CNN, $k$-NN, and RNN for classification across varying numbers of classes.

**Stock and Contract Management System** May 2022

- Designed SQL database for the management of supplier transaction and inventory data; set up Java APIs (e.g., inventory update, stock and contract information search, staff and supply center management) for the manipulation of database.
- Utilized Spring Boot to construct back-end server encapsulating all APIs with a multi-layers structure; developed separate front-end with web-based GUI implemented by HTML.

**Beijing PM2.5 Diagnosis and Forecast** Apr 2022

- Utilized Python to extract 5 years' data on PM2.5 concentrations and several meteorological indices in Beijing; completed data statistics, visualization and preprocessing.
- Trained long short-term memory (LSTM) using TensorFlow to model the relationship between PM2.5 concentration and those meteorological indices; predicted PM2.5 using the trained model and achieved $R^2 = 0.4623$ on test set.

## TECHNICAL SKILLS

**Programming Languages:** Java, Python, C/C++, SWIFT, MATLAB
**Technologies:** PyTorch, Tensorflow, Git, Slurm, Redis, SQL, Docker, Spring Boot, FastAPI, LaTeX