

# Haiwei Du

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## EDUCATION

### Beijing Jiaotong University (BJTU)

Sep 2020 – Jun 2024

Bachelor of Engineering in Computer Science, GPA: 3.89/4.00

Beijing, China

Awards: First Prize, BJTU Math Modeling Competition (top 5%); Honorable Mention of Mathematical Contest In Modeling (top 20%)

### Duke University

Aug 2024 – Jun 2026, expected

Master of Science in Electrical & Computer Engineering

Durham, United States

## PROFESSIONAL EXPERIENCE

### University of California, Irvine | Research Assistant | Supervisor: Ian G. Harris

July 2023 – Sep 2023

- Incorporated natural language processing and social engineering to fine-tune the Bloom, a large language model (LLM) open-sourced by Bigscience, and iterate on the model to recognize the sentiment of a given text and identify phishing emails
- Revealed that a self-customized Bloom 3b or 7b model trained using a smaller dataset could yield better generalization ability, achieving a 97.99% accuracy and 90.07% precision rate in detecting phishing emails

### Grandview Institution Consulting Co., Ltd. | Data Engineer&Analyst Intern

Feb 2024 – July 2024

- Collected and analyzed open-source intelligence on geopolitical situations, using web scraping and automation techniques to gather and filter information from think tanks, news websites, and databases, collecting 100+ pieces of intelligence.
- Reorganized the cleaned intelligence data to provide think tanks with a system that offers intelligence from different perspectives. Built a new database from scratch and designed the corresponding data relationships.

### Nextas Co., Ltd. | Software Engineer Intern

July 2022 – Aug 2022

- Initiated an internal process management application using PyQt5 in Python to provide over 30+ admins with the visual representation of the development flow, significantly facilitating their workflow management efficiency
- Performed customized adjustments, like optical optimization and 6-axis alignment, on each unique mobile lens; addressed 50+ edge cases and special conditions from real-world scenarios to ensure optimal performance

## FEATURED PROJECTS

### VOStyle: Video-oriented Pixel Intelligent Annotation System | BJTU | Team Leader & Full-stack Engineer

July 2022 – Sept 2022

- Led a 3-membered team to integrate two state-of-the-art neural networks, i.e., IOG and CFBI, to facilitate the images/videos object segmentation with 10+ original GUIs using PyQt5 and Django(Python).
- Hosted the daily team standup meetings to track the project progress and promote alignment within the team; proactively unblocked the teammates from ambiguity and technical challenges

### Renju-AI: Self-Improving Intelligent Renju Bot | BJTU | Software Engineer

June 2022 – June 2022

- Applied the Aho-Corasick automaton for pattern searching, reducing the state situation assessment time by 12.34%. Optimized search space to linear using a single-point heuristic, including the top 12 optimum nodes in each iteration
- Ranked 35th out of 337 teams in the Botzone Gomoku AI bot competition; selected as a Hall of Fame project in school, serving as a baseline template for CS students when creating their AI bots

### Sanshui: An Ultimate Blockchain-Based Deposit System for Students | BJTU | Team Leader

March 2022 – June 2023

- Launched a blockchain-based deposit system for small and medium businesses (SMBs) on campus, like water dispensers, washing machines, and air conditioners, providing reliable transaction records for SMBs to facilitate their financing process
- Directed a 3-membered squad to develop the MVP using Vue.js, Hyperledger, Xuperchian(from Baidu, Inc) and FISCO BCOS(from Webank); researched the financing and leasing needs of on-campus SMBs and analyzed their business models and pain points
- Integrated original user credit model and washing machine's energy-saving model based on authoritative academic research as a smart contract on the blockchain using Solidity, providing decentralized and secure access to user's financial records
- Obtained the second prize in the 2022 Chinese National Innovation and Entrepreneurship Training program for the MVP developed and presented the MVP to a diverse group of investors, securing \$1,000 in seed funding

## TECHNICAL PROFICIENCIES

**Programming Languages** C/C++, Python, Java, JavaScript, C#, Bash, Go, SQL, HTML, CSS, MIPS Assembly

**Tools & Frameworks** Django, NumPy&SciPy&Pandas, Matplotlib, MPI&OpenMP, MySQL, OpenCV, GurobiPy, Git, Unix/Linux, Anaconda, CUDA, MultiSim, MATLAB, Vim, Docker, PyTorch, Hugging Face, Bloom, PyQt, GPTs