Muyuan Zhang

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Education

NYU Tandon School of Engineering   **New York, NY**
Master of Science in Computer Engineering   *Aug 2024 – Dec 2025*
GPA: 3.86

University of California, Berkeley   **Berkeley, CA**
Bachelor of Science in Computer Science   *Aug 2017 - May 2021*
GPA: 3.7/4.0

Work Experience

Certified Kernel Tech LLC   **New York, NY**
Security Engineer   *July 2021 – May 2023*
- Audited over 10,000 lines of code & 30+ blockchain smart contracts (Solidity, Rust, Go) and Identified and mitigated 400+ security vulnerabilities.
- Analyzed 50+ blockchain security incidents; performed 20+ Solidity smart contract attack tests.
- Developed shell scripts to automatically deploy smart contracts to test networks, streamlining the auditing process.
- Built a Python-based token flow tracker for Ethereum, expediting transaction analysis and vulnerability detection.
- Conducted security audits, unit tests, and integration tests for 5 large-scale DeFi projects.

Certified Kernel Tech LLC   **New York, NY**
Research & Development Intern (Backend)   *May 2020 – Dec 2020*
- Developed 5+ new features in Go for a blockchain Oracle Module.
- Built a robust, scalable blockchain distributed system (Cosmos SDK, Tendermint).
- Designed validation & certification modules for scalability.
- Created RESTful API integrations for seamless frontend-backend communication.
- Researched Ethereum smart contracts and various DeFi projects (e.g., Compound).

Better Printer Institution Inc.   **Berkeley, CA**
Co-founder & Manager   *Jun 2018 – Present*
- Led & trained a team of 5, customizing slicing software from open-source PrusaSlicer.
- Designed *"Foldy"*, a foldable 3D printer for competitive robotics teams.

Landhigh Tech – VSO China   **Suzhou, China**
Software Developer Intern   *June 2019 – Aug 2019*
- Automated real-time uploads, improving workflow efficiency & user engagement.
- Developed a React-based UI module, enhancing user experience for 200+ customers.
- Resolved 20+ software bugs; launched 2 major patches & 10+ minor updates.

Technical Skills & Expertise

Languages: Python, Go, C, C++, Java, JavaScript, MySQL, Assembly, Solidity

Technologies: Docker, Kubernetes, TensorFlow, PyTorch, Cosmos SDK, Tendermint

Expertise: Machine Learning, OS Design, Blockchain Security

Academic/Personal Projects

Recommendation ML System (LLM + SASRec)   *Jan 2025 – Mar 2025*

○ Created a hybrid recommendation engine by combining **Llama3** for semantic text analysis with **SASRec** for sequence-based collaborative filtering, effectively addressing cold starts and position bias in 10,000 user-item interactions.

○ Used *scikit-learn* and *NumPy* for data preprocessing (25 features per entry), applying normalization, standardization, and bias-correction (resampling, weighted loss).

○ Deployed the system on **Chameleon** in a cloud-native environment with Docker, leveraging approximate nearest-neighbor retrieval for efficient real-time recommendations.

○ Co-designed a cross-entropy ranking loss, achieving 90% validation accuracy across three integrated modules.

Operating System Design   *Aug 2020 – Dec 2020*

○ Built a Linux-like OS based on Stanford's PintOS.

○ Implemented process control, parameter passing, and file system syscalls.

○ Developed a multi-thread priority scheduler (clock algorithm).

○ Devised a file system with buffer cache, ensuring synchronization via mutex locks.

○ Created a simple HTTP server and automated testing with Unittest.

Database System Optimization   *Aug 2020 – Dec 2020*

○ Built a B+ Tree index for faster data retrieval.

○ Optimized queries with block nested loop join and grace hash join.

○ Implemented multi-granularity locking and two-phase locking for concurrency.

○ Ensured data durability & consistency via WAL-based recovery protocols.