James Liu

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EDUCATION

Northwestern University — Evanston, IL | Sept 2020 - Jun 2024

- M.S. Electrical Engineering (2023-2024) | GPA: 3.98/4.00
- B.S. Computer Engineering (2020-2023) | GPA: 3.96/4.00
- ETH Zürich (Autumn 2023): 1/7 Northwestern students accepted into Computer Science Master's exchange program
- Farley Bay Area Quarter (Jan 2023 - Mar 2023): interdisciplinary entrepreneurship program based in San Francisco
- Honor Societies: Tau Beta Pi, IEEE Eta Kappa Nu

EXPERIENCE

Nvidia | Design Verification Engineer — Santa Clara, CA | Aug 2024 - Present

- Developing a C++ and SystemVerilog testbench to model and verify the memory system of Nvidia's Rubin architecture.

Apple | Design Verification Intern — Cupertino, CA | Jun 2023 - Sept 2023

- Created a PyTorch DQN model and tuned hyperparameters to steer test stimuli and improve functional coverage
- Developed SystemVerilog UVM testbenches for GPU modules according to design specifications and coverage criteria
- Modified infrastructure to support deadlock avoidance testing and debugged edge cases with Cadence waveform viewer
- Created a scoreboard for an instruction arbiter and added configuration modes to increase throughput metrics by 90%

Boeing | Software Engineering Intern — Germantown, MD | Jun 2022 - Sept 2022

- Deployed batch scripts and interfaced with Jenkins server to trigger automatic installation and testing on VM agents
- Wrote 17 Selenium unit tests for radio installation features and updated 3000+ line code base from Python 2.7 to 3.10
- Launched a new pipeline to post HTML results to Confluence page, integrating over 3 hours of software automation

Northwestern ECE Department | Teaching Assistant — Evanston, IL | Jan 2022 - Dec 2022

- Comp Eng 203: topics included digital logic, sequential circuits, and assembly programming

Otis Elevator | Software Engineering Intern — Florence, SC | Jun 2021 - Aug 2021

- Created and deployed a quality control website from scratch using a full-stack framework (Node.js, Express.js, Okta)
- Streamlined data collection by converting Excel sheet to SQL database hosted on the corporate server (Microsoft SSMS)

TECHNICAL SKILLS

- C, C++, SystemVerilog, Computer Architecture, System Design, Microprocessors
- Python, TensorFlow, PyTorch, Deep Learning, Linear Algebra
- Linux, Operating Systems, Distributed Systems

ORGANIZATIONS AND AWARDS

Northwestern Best Graduating Computer Engineering Award (June 2024)

Northwestern ECE Outstanding Undergraduate Researcher (2023)

- Communications and Networking Laboratory: used Deep Q-learning to model shepherding behavior

Northwestern Men's Club Soccer | Treasurer (Sept 2021 - Present)

Northwestern IEEE | Social Chair (Sept 2020 - Jun 2022)

- Project Manager of AI/ML group that created a web tool to diagnose MRI brain scans
- Developed a music playlist organizer using Spotify Web API, authorization flow, k-means clustering algorithm, and Matplotlib interactive display. Awarded Best Design at Northwestern IEEE showcase

American Invitational Mathematics Examination Qualifier (2019, 2020)

- Invited to take a 3-hour, 15-question mathematics exam after ranking in the national top 5% among AMC 12 participants, hosted by the Mathematical Association of America

MathIly (Jun 2019 - Aug 2019)

- Selected as one of 56 individuals nationwide for an intensive, five-week residential mathematics program. Studied discrete math topics including graph theory, combinatorics, and topology