Seunghyeok Lee

seunghye@andrew.cmu.edu | github.com/shstevelee | (xxx) xxx-xxxx | Pittsburgh, PA

Education

Carnegie Mellon University   **Pittsburgh, PA**
Bachelor of Science in Electrical and Computer Engineering   *August 2024 – May 2028*
- QPA 4.00, CIT Dean's List
- **Coursework:** Imperative Computation, Discrete Mathematics, Differential Equations, Electronic Devices and Analog Circuits, Computer Systems, Signals & Systems, Structure & Design of Digital Systems, Computer Security

Professional Experience

CMU Micro and Nano Systems Laboratory, Research Assistant   March 2025 – Present
- Automated RF testing, cutting manual oversight by three orders of magnitude and increasing test throughput by at least 10x.
- Programmed Cascade 12k probe station and Agilent PNA-X using C, setting up DDE and sending SCPI commands.
- Studied ferroelectric hysteresis of $LiNbO_3$, piezoelectric BAR/filters, and acoustic impedance matching & Bragg mirrors.

CMU College of Engineering, Teaching Assistant   February – May 2025
- Provided personalized assistance for three at-risk students in ECE to pass their graduation requirement classes.

Samsung Research Jordan, Open Innovation Intern   June – August 2023
- Analyzed current AI services in the MENA and evaluated market implications of $35B worth of investments by GCC countries; examined planned public sector investments until 2030, and trends in private sector investment growth
- Collaborated with Bixby Engineers; developed knowledge of Arabic tokenization and neural network architecture for Arabic NLP

Frameworks Consulting, Founder   November 2022 – May 2024
- Partnered with an animal husbandry farm and offered financial and operational consultation; reduced production cycle by almost two months and decreased water usage per sheep by 18%; generating 11,313 NIS through commission.
- Budgeted capital towards animal health and disease prevention using a slatted flooring design to improve growth rate

Project Experience and Activities

ScottyLabs Tech Committee, Data Acquisition Lead   August 2024 – Present
- Improved UI/UX, optimizing path efficiency for room reservations and classroom tech instructions from 5 to 3 clicks.
- Developed serialization and deserialization scripts for the Tech team database and web-scrapers to efficiently collect datasets: on-campus events, printer/scanner, room reservation & location data, etc.

Cache Simulator & Matrix Transpose Optimizer – Computer Systems   June 2025
- Implemented a cache simulator in C to simulate load/store cache hits/misses/evictions for different cache configurations.
- Cache-optimized a matrix transpose algorithm for the Haswell L1 cache; placed 2nd out of 196 students in total cycles.
- Implemented cache-blocking techniques and utilized temp. array space to maximize temporal locality and minimize conflict misses.

Delta Hedger – BSCF Hedging Competition   October – December 2024
- Developed a Python program using a greedy algorithm to delta hedge, achieving <0.3% average daily portfolio value fluctuation; learned basics of option pricing equations and risk management in financial markets; Team placed top 10.

C0 Virtual Machine – Imperative Computation, Final Project   December 2024
- Programmed the virtual machine for the C0 programming language using C; developed knowledge of bytecode instructions, Just-in-Time compilation, and WORA (write once, run anywhere)

MSDS_LM – NOVA, AI Hackathon   November 2024
- Developed a material safety datasheets summarizer with Python Streamlit that utilizes LLMs and TTS to quickly inform lab participants of precautions and first aid measures in case of emergency.

Additional Information

Technical: C/C++, Python, Java, SCPI, GPIB, Verilog, HTML, CSS, JavaScript & TypeScript, React

Languages: English (Fluent), Korean (Fluent), Arabic (Intermediate), Chinese (Beginner), Spanish (Beginner)

Certificates: DeepLearning.AI Machine Learning Specialization, HKUST Matrix Algebra for Engineers, UMich Web Design for Everybody Specialization, UMich Python for Everybody Specialization, Duke Java Programming and Software Engineering Fundamentals Specialization, Columbia Global Centers Social Entrepreneurship, Purdue Semiconductor Fabrication 101

Other Interests: Classical Guitar, Weightlifting, Public Health, Quantum Computing, Language Learning, ASIC and FPGAs