Shane Lee

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Education

University of Adelaide — Adelaide, SA
Bachelor of Computer Science | GPA: 6.15/7 — *Feb. 2023 – Nov. 2027*

Seoul National University — Seoul, South Korea
Bachelor of Computer Science — *Jul. 2024 – Dec. 2024*

Experience

CyberLab Intern — Adelaide, SA
University of Adelaide — *Feb. 2025 – Jun. 2025*

- Architected AI-driven traffic and user interaction simulations in collaboration with Prof. Olaf Maennel, utilizing MongoDB, Selenium, and the Gemini API to build high-fidelity cybersecurity testing environments.
- Developed an autonomous social media ecosystem featuring diverse AI personas, leveraged LLMs for dynamic personality generation and real-time interaction, facilitating complex behavioral analysis.

Projects

FIFA Live Market Trading Signaler | *Python, MySQL*

- Engineered an end-to-end market intelligence pipeline that ingested real-time in-game currency player pricing data into a MySQL database, enabling live detection of market profitable opportunities.
- Developed a predictive pricing engine that utilized historical back-testing and volatility analysis to trigger instant Discord API alerts, resulting in a 375% ROI (1.5M profit) within the first 60 days.
- Optimized data acquisition using Asyncio and BeautifulSoup, implemented semaphores and rotating headers to manage high-concurrency requests while bypassing anti-scraping rate limits.
- Architected the deployment on PythonAnywhere, utilizing scheduled tasks and headless browsers to ensure 24/7 market monitoring and 99.9% uptime for trade signals.

Monte Carlo Poker Engine | *C++*

- Engineered a high-performance simulation engine capable of executing 100,000,000 Monte Carlo iterations in under 3 seconds, utilizing C++20 to evaluate hand equities across millions of random permutations.
- Optimized execution speed by implementing SIMD-friendly bitwise operations, perfect hashing, and multi-threading to maximize CPU utilization, with using perf to profile the performance to identify overhead.

Block Model Compression Stream Processor | *C++*

- Collaborated in a team of 8 on an industry-sponsored project with Maptek, designing a block model stream processor to optimise compression ratio and runtime performance, with a week of leading the team as scrum master.
- Designed and implemented a producer–consumer system leveraging multi-threading to optimise throughput, ensuring efficient task scheduling and parallel execution.

Extracurricular Activities

Adelaide Competitive Programming Club — *Feb. 2025 – Present*

- Competed in ICPC-style programming contests, implementing efficient solutions under strict time and memory constraints.
- Collaborated in a three-person team to solve complex problems involving advanced data structures, graph theory, and algorithmic optimization.

Technical Skills

Languages: Python, C/C++, SQL, JavaScript
Frameworks: React.js, Node.js
Libraries: pandas, NumPy, Matplotlib, Scikit-Learn