Lawrence Liu

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Education

Purdue University West Lafayette, IN

BS in Computer Science, Minor in Economics *Expected Graduation: May 2027*

- Coursework: Object-Oriented Programming, Programming in C, Statistics, Computer Architecture, Data Structures & Algorithms, Systems Programming, Operating Systems, Software Engineering, SQL

Experience

DevOps Intern May 2026 – August 2026

Keysight Technologies *Colorado Springs, CO*

- Replaced a four-step manual build process with CloudBees CI multibranch pipelines triggered on every PR across 4 product lines, automating MSBuild/Visual Studio builds with Conan and Chocolatey dependency management.
- Defined pipeline and controller configuration as code with JCasC on provisioned ephemeral and static Windows VM agents in a private cloud, scripted in PowerShell and Python.
- Integrated Bitbucket with CloudBees CI to gate every pull request behind automated smoke tests and two-reviewer approval, blocking broken builds from reaching Artifactory.

Data Scientist Intern Aug 2023 – May 2024

Bayer, The Data Mine *West Lafayette, IN*

- Partnered with product stakeholders in Agile sprints to architect and deploy predictive models for optimizing plant yield, ensuring high scalability and reliability.
- Engineered scalable data pipelines in Python and R that cleansed and transformed datasets exceeding 15,000 records, streamlining the preprocessing workflow for rapid iteration.
- Led technical implementation and testing of machine learning models (Random Forest, Neural Networks) that consistently achieved over 70% accuracy.

Projects

DSA Versus | *TypeScript, Node.js, React, PostgreSQL, Redis, WebSockets, Docker, Github Actions*

- Designed and deployed a real-time full-stack platform from ideation to production, supporting 20+ concurrent matches with <1 s state synchronization latency.
- Wrote technical specifications and implemented a sandboxed execution pipeline in isolated Docker containers orchestrated with Docker Compose to prevent arbitrary code execution.
- Iterated and shipped code rapidly using GitHub Actions for CI/CD, managing backend APIs, relational schemas, and Redis matchmaking queues.

Custom Linux Shell | *C++, Bash, C, Lex, Yacc*

- Built a custom Unix based shell in C using Lex/Yacc, implementing command parsing, pipelines, I/O redirections, and subshells.
- Engineered robust signal handling (SIGINT/SIGCHLD) for Ctrl-C interruption while ensuring zero memory leaks through rigorous testing.
- Built a terminal line editor with history navigation and regex-based wildcard expansion.

Activities

Korean American Student Association Vice President November 2023 – May 2025

- Oversaw executive board of 10+ and managed large-scale events for 100+ general members.
- Led strategic engagement initiatives resulting in a 50% increase in member acquisition over previous years.
- Organized 20+ events per semester, including big-little mentorship groups and celebrity dance workshops.

Technical Skills

Languages: JavaScript, TypeScript, Python, SQL, C, C++, Java, HTML/CSS, Bash, Powershell
Frameworks/Libraries: .NET, React, Node.js, Flask, JUnit, Pandas, NumPy
Tools & Technologies: Git/GitHub, Docker, Kubernetes, Jenkins, CloudBees CI, Splunk, VS Code/Studio, Agile, Linux
Languages (Spoken): English, Spanish, Japanese, Korean, Cantonese