Harry Leung

Software Engineer
408-768-9633 | hleung.cs@gmail.com | Milpitas, CA
https://hleung.vercel.app

Education

University of California, Irvine Sep. 2021 – Jun. 2025
B.S. in Computer Science

Relevant Coursework: Neural Networks & Deep Learning, Operating Systems, Database Systems
Artificial Intelligence, Machine Learning, Graphical Models, Information Retrieval, Data Structures & Algorithms, Networks

Work Experience

Software Engineering Intern Jun. 2023 – Sep. 2023
Teradyne Inc. (Litepoint Division) San Jose, CA

- Enhanced data visualization and regression analysis by developing a Tkinter-based GUI tool, reducing onboarding time for new engineers by 30% and improving decision-making speed.
- Reduced query response time by 96% through Apache Cassandra integration, optimizing storage/retrieval of regression tester data and improving reliability for 100+ GB datasets.
- Increased team efficiency by 25% by streamlining deployment workflows for internal tools, enabling faster quality testing and quicker release readiness.
- Designed and implemented responsive Tkinter interfaces with intuitive layouts, decreasing training requirements for new users from 2 hours to under 45 minutes.
- Integrated Matplotlib to generate actionable visual reports, accelerating root-cause analysis for performance issues by 40%.

Projects

Toy Programming Language Interpreter | Language Design, LLVM, Compilers, AST, Lexing, Parsing

- Developed a custom interpreter with a complete language processing pipeline (lexical analysis, parsing, AST construction, interpretation) supporting variables, arithmetic operations, control flow, functions (including recursion), and error handling.
- Integrated basic LLVM-based code generation to enable future compilation and performance optimization.

ICS Web Crawler | Python, Web Crawling, Distributed Systems

- Configured a scalable web crawler leveraging a spacetime cache server for distributed URL fetching on the UC Irvine ICS domain.
- Implemented custom scraper rules to filter, parse, and enqueue valid web URLs.

Virtual Memory Manager | Operating Systems, Memory Management, LFU Caching, Virtualization

- Built a virtual memory manager simulating two-level paging and dynamic memory allocation.
- Implemented malloc, free, and realloc to manage physical memory blocks with fragmentation-aware policies.
- Designed and integrated LFU (Least Frequently Used) page replacement logic for page faults and allocation retries when memory is full.

AI Art Detector | Python, Deep Learning, PyTorch, Transformers

- Achieved high-accuracy binary classification of AI-generated vs. human-made images by training custom CNN and Vision Transformer models.
- Enhanced model robustness and generalization through targeted data augmentation, normalization, and preprocessing techniques.
- Streamlined experiment reproducibility and performance tracking using WandB, enabling rapid iteration and evaluation.

Skills

Languages: Python, C++, C, Rust, JavaScript, TypeScript, Go, Java, Swift, x86/ARM Assembly, SQL, HTML
Web & Frameworks: React, Next.js, Tailwind CSS, Node.js
ML/DL Libraries: PyTorch, Keras, NumPy, Transformers
Systems & Tools: LLVM, OpenGL, Redis, Git, Linux, Docker, Bazel, CMake, Makefile, CI, Valgrind, GDB, Radare2, Tracy, libFuzzer, ASAN, MySQL, NoSQL
Spoken Languages: English, Cantonese, Mandarin