Harry Leung

Software Engineer
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Education

University of California, Irvine Sep. 2021 – Jun. 2025

BS in Computer Science, In Progress

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, QA Test Automation Jun. 2023 – Sep. 2023

Litepoint San Jose, CA

- Enhanced data visualization and displayed regression values to improve decision-making by developing a user-friendly GUI tool.
- Reduced query response time by over 96% with Apache Cassandra implementation optimizing storage and retrieval of regression tester data and maximizing data reliability.
- Improved team efficiency by optimizing processes in deploying tools, facilitating decision-making speed, and quality testing outcomes.
- Designed and created an intuitive and responsive GUI using Tkinter, improving user interaction and reducing the learning curve for the team.
- Integrated Matplotlib for data visualization, enabling the creation of insightful graphs to enhance data analysis.

Projects

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

- Developed a custom interpreter for a toy programming language, encompassing a complete language processing pipeline: lexical analysis, parsing, AST construction, and interpretation.
- Implemented support for variables, arithmetic operations, control flow constructs, functions (including recursion), and error handling mechanisms.

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.
- Designed flexible architecture with re-definable frontier and worker classes for multi-threaded crawling.

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
Libraries: Keras, NumPy, LLVM, OpenGL, React, Node.js, Redis
Developer Tools: Git, Linux, Docker, Bazel, CMake, Makefile, CI, Valgrind, GDB, Radare2, Tracy, libfuzzer, ASAN, React.js, Next.js, Tailwind CSS, Git, GitHub, mySQL, noSQL
Spoken Languages: English, Cantonese, Mandarin