CALVIN LEI-CRAMER

github.com/calvincramer ◇ calvinlc.com

925 · 642 · 4558 ◇ calvincramer at gmail ◇ Remote, USA ◇ US Citizen

EXPERIENCE

Wind River Systems ..... *Sep 2019 - Current*
Member of Technical Staff Alameda, CA
Backend, frontend, cloud relating to virtual twin projects, VxWorks RTOS and embedded development, mentor interns

CS Tutor *2018, 2024*
One-on-one tutoring for a variety of CS topics

EDUCATION

Georgia Institute of Technology ..... *August 2021 - May 2024*
M.S. in Computer Science in Computing Systems

University of California, Davis ..... *Sep 2017 - Jul 2019*
B.S. in Computer Science

SKILLS AND KNOWLEDGE

Computer Languages	TypeScript, JavaScript, Golang, Python, Rust, Bash, Java, C, C++, Matlab, R, TI-BASIC, Lisp, Prolog
Other	docker, kubernetes, REST, HTML, CSS, SASS, socket.io, SSE, nginx, Qemu, Simics, GitLab CI, Svelte, Jenkins, git, gdb, make, Ghidra, PIN, opencv, Keras, PyTorch, ROS, Java Swing and AWT, ImGui
Relevant Courses	Malware Analysis, High Performance Comp Arch, Software Engineering, Computer Vision, Compilers, Programming Languages, Algorithms, Machine Learning, Operating Systems

PROJECTS

- Develop simple web browser from scratch.
- Implemented priority-based queuing reservation system for physical hardware targets, allowing users to effectively utilize hardware targets.
- Full stack application to run and interact with OS simulations, using socket.io for real-time communication.
- Implement remote display mirroring for digital twin targets, allowing users to run GUI workflows and collaborative debugging.
- Add Android Emulator as a virtualizable target for APK development and automated testing workflows.
- Reverse engineer old Win32 virus. Make Ghidra plugins to generate def-use for each instruction, and data dependence graph. Make PIN tools to generate execution trace and dynamic control dependence graph.
- Teach Golang to team of 20 developers, including lecture slides and practice code exercises.
- Containerize VxWorks build tools accomplishing deterministic builds, apart of the Platform One Iron Bank DoD program.
- Massively increase Boost library support in VxWorks accross x86, ARM, PowerPC, 32 and 64 bit targets.
- Created a optimizing compiler for simple language targeted for 32-bit MIPS
- Created an interactive visual mock-up of new feature using NiceGUI for early discovery and rapid iteration

- Self-driving car research: studied the fundamentals of lane-line detection using computer vision, neural networks, object localization and classification, image segmentation, state estimation using Kalman filter, and PID controllers. Researched state-of-the-art deep CNN based methods for lane-line detection and classical computer vision approaches.
- Project Euler - 135 problems solved since 2017 - example of solved problem: `projecteuler.net/problem=144`
- Created a terminal-based security component configuration tool for VxWorks RTOS allowing users to easily configure complex options.
- Worked in team of 9 to develop map creation tool for a recreation of Warcraft II (1995) game
- Designed 15-bit RISC CPU using Logisim with a Fetch-Decode, Execute-Writeback architecture
- Developed a unix shell that supports background processes, piping, and input/output redirection
- Developed a thread library with TPS, preemption, and semaphores for multithreaded synchronization
- Implemented a FAT-like file system with block-level access to a binary file
- Implemented 32-bit FP calculator using only integer arithmetic in MARS MIPS simulator
- Ported Theseus and Minotaur game to TI-84 Plus using TI-BASIC with little memory and slow CPU
- Implemented a sorting algorithm visualizer in a step-wise sorting fashion for common sorting algorithms
- Implemented the common snake game with ANSI escape sequences to run inside a terminal