

Nick Kisel

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github.com/nkisel

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Experience

Verkada **Software Engineer** (Go, Python, AWS, Datadog, Kubernetes) *March 2022 -*

Architected full-stack *First Person In* system to safely open 10,000+ schools, factories, & pharmacies daily. Aggregated events from 100,000+ doors, delivering live updates in addition to i18n alert emails & SMS. Created Postgres table relations & migrated data via SQLAlchemy; 100+ interviews on Lever. Maintained 99.99% microservice & device stability via Datadog monitoring, alerting, & ArgoCD rollouts.

DocuSign **Software Engineer Intern** (C#, TypeScript, React) *May 2021 - August 2021*

Integrated passwordless login & 2FA via *WebAuthn* compliant OS authenticators and security keys. Presented security considerations, user experience, market research, and technical specifications.

Snackpass **Software Engineer Intern** (Java, TypeScript, React) *August 2020 - January 2021*

Designed intuitive kiosk and POS apps to receive orders & print receipts; deployed to 300+ restaurants. Add social ordering features, campus & card integrations, group orders & user referrals.

Aruba **Embedded Software Engineer Intern** (C, Python) *May 2020 - August 2020*

Designed macro- & enum-based logging infrastructure for debugging network switch connectivity. Optimized processor & memory use, eliminating *up to 50% memory usage* for multithreaded processes. Remotely configured on-site hardware by reserving machines and installing new builds via shell.

Education

University of California, Berkeley (GPA: 3.89)

August 2018 - May 2022

Bachelor of Arts, Computer Science

Berkeley, California

Data Structures & Algorithms
Operating Systems

Embedded Systems
Parallel Programming

Database Design
Computer Security

Projects

<https://nkisel.github.io/web/>

Gitlet

(Java, Python)

Add, remove, commit, push, and pull different versions of files and maintain branches just like with Git. Files & commits are uniquely identified by SHA-1 hashing and serialized in a hidden directory.

Fileshare

(Go)

End-to-end encrypted filestore with editing & sharing capabilities. User/file names & sizes are protected. Digital signatures, HMAC, RSA, PBKDF, & symmetric key encryption protect keys, files, and user data.

PintOS

(C, GDB, x86 Assembly)

Designed system calls, priority scheduler & filesystem operations, allowing processes to share resources. Created an interactive shell, support for malloc & free via heap memory allocation, and page fault handler. Organized design meetings, pair programming sessions, style & submission guidelines for four devs.

Mandelbrot Fractal Viewer

(C, GDB, Valgrind, OpenMP, Intel AVX)

Generates a video of a linear zoom between two magnifications of the infinitely deep Mandelbrot fractal. Sped up computation *up to 18x* via multithreading, SIMD instructions, loop unrolling & cache optimization.

Database

(Java)

SQL database with logging to maintain consistent state and atomic transactions under ACID properties. Sort, hash, & block joins reduce I/Os per query; B+ tree locking maintains consistency with parallelism.

Skills

Go, Python, Java, C#, C, x86/RISC, TypeScript, React, (no)SQL, Datadog, K8s, ArgoCD, Jenkins.
Git, Bash, unit/integration testing, debugging, optimization, design/code/API documentation.
Music & video production, guitar, weightlifting, hiking, travelling, learning Spanish & Japanese.