Kyle O'Connor

Software Engineer

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About

I am a results-oriented generalist software engineer with over 10 years of experience in startups and R&D companies. My strengths include attention to detail, being a force multiplier/unblocking people and providing team leadership. My current strongest technical areas are backend and cloud infrastructure. Outside of work, you can often find me either playing, watching, or attending soccer matches.

Experience

Mighty   June 2022 - November 2022

Senior Software Engineer

A startup building a faster web browser by streaming Chrome from the cloud. I was employee #20.

2nd member of the Windows team responsible for porting the macOS browser to Windows which launched to alpha customers in November 2022.
Implemented hardware decoding/rendering/shaders (DirectX), audio playback (RtAudio/WASAPI) and native UI (Win32 API).
Shipped native M1 (arm64) build of macOS browser to massively improve performance on Apple Silicon devices.
Directly responsible individual for hardware security keys feature involving cross-platform C++ and client/server Node.js applications in TypeScript.
Maintained CI/CD in GitHub Actions and implemented automated static code analysis using Infer.
Involved in customer support, interviewing candidates and helped to onboard and mentor new hires.
Became familiar with Chromium and Electron development.

Princeton Identity   August 2016 - June 2022

Lead Software Engineer

A biometric identity management startup targeting physical access control and commercial real estate markets. Created as a spin-off from SRI International with investment from Samsung. I was a founding member of the company.

Led the software team of 5 engineers and all software development efforts/decisions/strategy.

Architected and launched a multi-tenant cloud application on AWS, focused on scalability, security and best practices using IaC (Terraform).

Designed and implemented an external data sychronization system using PostgreSQL, Debezium, AWS Kinesis and AWS Lambda.

Designed, developed, debugged frontend and backend web applications for biometric access control solutions (Spring Boot, React, PostgreSQL).

Fully automated builds and cloud deployments with GitHub Actions, Packer and Terraform Cloud. Introduced static analysis tools (Sentry, Infer, FindBugs).

Designed, developed, debugged embedded C/C++ code for biometric device hardware. Wrote multiple Linux kernel drivers for cameras and other sensors.

Maintained custom Linux kernel and U-boot forks, Yocto BSP toolchain and automated build system.

Implemented secure boot and zero copy video decode and rendering pipeline (OpenGL) on embedded NXP/Freescale i.MX6 platform.

Managed bare metal servers running VMware ESXi and vSphere. Set up firewall, internal networking and vSAN to separate storage and compute.

Became familiar with mobile development on both Android (Kotlin) and iOS (Swift).

SRI International
Software Engineer III

July 2010 - August 2016

Formerly Sarnoff Corporation, a technology research and development firm. I was a member of the System Software Design and Development group.

Software team lead for a multimodal handheld biometric recognition device involving custom Android (AOSP) fork and Android Java application.

Designed and developed software in C++ for real-time video processing and georegistration systems for UAVs.

Wrote algorithm implementations based on MATLAB in C, focused on accuracy/performance/optimization (SIMD).

Bulit the DevOps infrastructure for code review, continuous integration, static analysis, and unit testing (Jenkins).

Education

Drexel University

2005 - 2010

Bachelor of Science
Computer Engineering
🎓 GPA: 3.65

| Graduated with honors (Cum Laude) | Scholar-Athlete (NCAA Division 1) | Honors Student |

| Minor in Business Administration | Spanish |

Publications

"*Method and System for Seamless Biometric System Self-Enrollment*" *(US20220253514A1)* in US Patent and Trademark Office,

"Face Biometric Recognition with Anti-Spoofing" (Provisional) in US Patent and Trademark Office,

Skills

Programming Languages

C++   Java   C   JavaScript/TypeScript   SQL   C#   Python   Rust

DevOps

Terraform   AWS   Docker   GitHub Actions   Jenkins   Sentry

AWS

VPC   EC2   ALB   S3   RDS   DynamoDB   ElastiCache   Kinesis   Lambda   ECS   Fargate

OS

Windows   Linux (Ubuntu, CentOS)   Embedded Linux (Yocto)   MacOS

IDE

Visual Studio Code   IntelliJ IDEA   Visual Studio

Static Analysis   Unit Testing

FindBugs   Snyk   Coverity   Infer   JUnit   Mockito   Jest

Build Tools

Yarn   Gradle   CMake   MSBuild   WiX Toolset

Version Control

Git   GitHub   Subversion   TFS

Languages

Brazilian Portuguese
Limited Working Proficiency

Interests

⚽ Soccer