Kyle O'Connor

Software Engineer

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About

I am a results-oriented software engineer with nearly 15 years of experience in startups and R&D companies. I have been recognized for my attention to detail, my ability to unblock team members and provide technical leadership. While I am a generalist, my current strongest technical areas are cloud infrastructure, backend development, and embedded systems. Outside of work, I enjoy playing, watching and attending soccer matches.

Experience

Rank One

April 2023 - Present

Senior Software Engineer

Mighty

June 2022 - November 2022

Senior Software Engineer

Joined startup as employee #20 to build a faster web browser by streaming Chrome from the cloud. Decommissioned in late 2022.

Led the Windows team responsible for porting the macOS browser to Windows, delivering an alpha version to 10 customers in November 2022.
Developed and implemented hardware decoding/rendering/shaders (DirectX), audio playback (RtAudio/WASAPI), and native UI (Win32 API).
Shipped a native M1 (arm64) build of the macOS browser, resulting in a significant performance improvement on Apple Silicon devices.
Took ownership of 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.
Provided customer support, participated in interviewing candidates, and mentored new hires.
Gained expertise in Chromium and Electron development.

Princeton Identity

August 2016 - June 2022

Lead Software Engineer

Founding member of 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.

Led a team of 5 engineers and directed all software development efforts, including strategy and decision-making.
Architected and launched a multi-tenant cloud application on AWS, emphasizing security best practices using IaC (Terraform).
Designed and implemented an external data synchronization system using PostgreSQL, Debezium, AWS Kinesis, and AWS Lambda.
Developed, debugged, and maintained frontend and backend web applications for biometric access control solutions (Spring Boot, React, PostgreSQL).
Automated builds and cloud deployments using GitHub Actions, Packer, and Terraform Cloud, and introduced static analysis tools (Sentry, Infer, FindBugs).
Designed, developed, and debugged embedded C/C++ code for biometric device hardware, including writing multiple Linux kernel drivers for cameras and 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, and set up firewall, internal networking, and vSAN to separate storage and compute.
Gained experience with mobile development on both Android (Kotlin) and iOS (Swift).

SRI International
July 2010 - August 2016

Software Engineer III

A technology research and development firm formerly known as Sarnoff Corporation. As a member of the System Software Design and Development group, I contributed to various projects involving biometric recognition and real-time video processing.

Led a software team in developing a multimodal handheld biometric recognition device, which included a custom Android (AOSP) fork and an Android Java application.
Designed and developed real-time video processing and georegistration applications for unmanned aerial vehicles (UAVs) using C++.
Implemented and optimized image processing algorithms based on MATLAB in C, achieving a reduction in processing time using SIMD instructions.
Established the DevOps infrastructure for code review, continuous integration, static analysis, and unit testing using 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/C++ Java JavaScript/TypeScript SQL C#/.NET Core 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

FindBugs Snyk Coverity Infer

Unit Testing

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