Kyle O'Connor

Software Engineer

Philadelphia PA

✉ kyle.james.oconnor@gmail.com

☎ 215-253-8556

in kylejoconnor ⬤ KOConchobhair

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

ROC
April 2023 - Present

Principal 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
Software Engineer III   July 2010 - August 2016

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   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