Scott Johnson

Contact Information

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Summary

Highly accomplished Principal Graphics Engineer with over 15 years of experience specializing in designing, building, and optimizing performance-critical, real-time rendering systems for the gaming and high-performance application sectors. Proven expert in leading low-level graphics architecture, driving extreme CPU/GPU optimization for high-fidelity experiences, and mentoring high-performing engineering teams. Passionate about pushing the boundaries of next-generation console gaming technology and contributing to AAA titles.

Core Competencies

- **Graphics Architecture & Performance Systems Design**: Real-Time Rendering Pipelines, Console Optimization, GPU-Driven Rendering, High-Performance Systems, Low-Level Graphics APIs, Scalability & Performance, Data Structures & Algorithms
- **Languages & Technologies:** C++, Rust, Python, Java, GoLang, TypeScript, JavaScript/Node.js, PHP
- **DevOps & CI/CD Pipeline Development:** Jenkins, AWS, Docker, Terraform, GitLab CI, CircleCI, GitHub Actions, Heroku
- **Leadership & Collaboration:** Technical Mentorship, Agile Methodologies, End-to-End Project Ownership, International & Distributed Team Collaboration, Product Roadmap & Planning
- **Gaming & Low-Level Graphics**: Real-Time Rendering Techniques, Console Graphics Development (DirectX, WebGL, OpenGL, Vulkan), Shader Development (GLSL, [If applicable: HLSL/PSSL]), Hardware-Accelerated Video Capture, GPU Optimization

Work Experience

Remote

Capture Software Engineer at Chromatic **Mar 2023 - Present**

- Architected and developed distributed, fault-tolerant backend services within a large-scale Service-Oriented Architecture (SOA), applying principles of scalability and performance critical for real-time systems..
- Maintained and improved capture infrastructure using Docker, Heroku, and AWS.
- Applied browser and rendering expertise to improve image differencing algorithms, increasing accuracy and reliability.
- Collaborated on cloud architecture to achieve measurable improvements in deployment speeds.
- Partnered closely with Product and UX leaders to align the technical roadmap with customer needs, ensuring engineering initiatives directly supported business outcomes.

Founder/CEO at FoamFactory **Jan 2021 - Mar 2023**

- Led the full-stack development and architectural design of a SaaS platform for brewery management using **Ruby on Rails and React**, successfully taking the product from concept to market.
- Architected a scalable, high-availability microservice backend leveraging **Rust**, demonstrating versatile backend engineering capabilities and foundational architectural design.
- Created resuable **React** component library using Storybook, improving developer efficiency and software reusability.
- Pioneered strategic growth initiatives, enhancing operational efficiency and market reach through innovative tech solutions.
- Led efforts for the acquisition of venture capital funding to drive growth and plan for future expansion.

Principal Engineer at Medal **Dec 2019 - Jan 2021**

- Contributed to core architecture and performance enhancements for a large-scale gaming social platform, ensuring optimal user experience for millions of players.
- Engineered a secure, high-performance, hardware-accelerated video capture system for a next-generation gaming social platform, demonstrating expertise in low-level system optimization and direct impact on a large user base within the gaming community.
- Collaborated daily with cross-functional, **globally distributed engineering teams** to enhance software architecture and integrate third-party services, boosting system efficiency and performance.
- Mentored other engineers on the team, supporting the continuous improvement of the engineering organization.

Lead Graphics Engineer at InVision App **Dec 2016 - Dec 2019**

- Led the architecture and development of a high-performance, real-time rendering platform, demonstrating expertise in low-level GPU optimization and leading cross-functional teams in complex system design.
- Utilized **WebGL, haXe, and Typescript** for efficient GPU-based rendering of complex vector graphics.
- Designed and implemented a highly optimized, GPU-based rendering system for complex vector graphics, directly programming shaders in GLSL to achieve peak visual quality and frame rates, addressing demanding performance and memory constraints.
- Utilized GLSL for shader programming, achieving stunning visual effects in WebGL.
- Prototyped WebAssembly-based rendering engines, exploring **Rust and Skia** for future improvements.

Minneapolis, MN **Mobile Engineering Lead at When I Work** **Sep 2014 - Dec 2016**

- Led team to innovate Android app solutions, enhancing user engagement and satisfaction, reflected in improved app ratings from 2.9 to 4.0.
- Led a team of 3 developers in an Agile environment, improving project delivery times and application quality through rigorous code reviews, CI/CD, and mentorship.
- Managed CI environment with tools like TravisCI and CircleCI.

- Implemented code quality standards through the use of code reviews, test coverage analysis, and static analysis processes.
- Coordinated agile practices, improving project delivery times.

Edina, MN

Android Engineering Lead at Jingit **Nov 2013 - Sep 2014**

- Led cross-functional teams in developing an Android app for retail rewards, enhancing app features, as well as driving substantial engagement and user satisfaction.
- Boosted team productivity by 10% weekly through agile processes and coding standards.
- Implemented automated testing and CI through the use of Jenkins, improving code reliability on Android and iOS.
- Streamlined the push notification system, ensuring timely user updates and messaging across all devices.
- Oversaw app lifecycle, from feature design to successful Google Play Store release.

Remote

Platform Engineer, Layout at Mozilla **Jun 2011 - Oct 2013**

- Engineered and maintained performance-critical, low-level rendering systems within the Gecko engine using C++, optimizing core components for a platform supporting hundreds of millions of users, directly addressing CPU/GPU efficiency and adherence to detailed technical specifications.
- Significantly optimized rendering pipelines for high-performance web-based gaming applications, leveraging WebGL and DirectX (a desired technology for console platforms) to achieve extreme performance gains and cross-platform stability, demonstrating ability to ‘wring the last drop of performance out of any CPU or GPU’.
- Architected and implemented core rendering systems compliant with W3C standards, focusing on stability, extensibility, and cross-platform performance.
- Created layout code for Firefox Android with the Android SDK and NDK, improving performance.
- Developed complex C++ rendering features, with an acute focus on low-level performance optimization and adherence to stringent technical specifications, contributing to a robust graphics architecture.
- Optimized animated image rendering, improving browser efficiency and user experience.
- Enhanced text readability in Firefox, contributing to user engagement and satisfaction.
- Contributed to W3C specs such as CSSOM and WebGL, driving standards in web technologies.
- Enhanced cross-platform performance by optimizing code efficiency, leading to improved user experience across Mozilla products.

Education

University of Minnesota

Master of Science, Computer Science **2006-2009**

From 2006-2009, was in a PhD program in Computer Science with research focuses in computational geometry and photorealistic rendering in computer graphics.

University of North Dakota

Bachelor of Science in Computer Science **2001-2006**

Completed a Bachelor's degree in Computer Science with focused study in software engineering and computer graphics. Graduated summa cum laude.

Bachelor of Science **2001-2006**

Completed a separate Bachelor's degree in Mathematics with focused study in statistical theory, number theory, and combinatorics. Graduated summa cum laude.

Awards and Recognitions

Top Secret Clearance (Currently Inactive); *United States Department of Defense*, 2009-2011

Google Summer of Code Mentor; *Crystal Space 3D SDK*, Summer 2008, Summer 2009

Google Summer of Code Grant Recipient; *Crystal Space 3D SDK*, Summer 2007

Inducted Lifetime Member, *Phi Beta Kappa*, Honor Society in Liberal Scholorship, 2006

Inducted Lifetime Member, *Upsilon Pi Epsilon*, Computer Science Honor Society, 2004

Skills

- **Languages**: C++, Rust, Java, Python, Ruby, Go, Javascript/TypeScript
- **Frameworks & Libraries**: Ruby on Rails, React, Node.js, WebSockets, Electron
- **Databases**: PostgreSQL, MySQL, Redis, Microsoft SQL Server, Hibernate
- **Cloud & DevOps**: AWS, GCP, Docker, Terraform, CircleCI, Jenkins, Github Actions
- **Platforms & Systems**: Linux, Mac OS/X, Windows, Gecko
- **Graphics**: OpenGL, WebGL, DirectX, Vulkan, Shader Languages (GLSL, Familiar with HLSL/PSSL)