Shawn Hoover

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Role

Software technical lead experienced in IoT monitoring and instrument control.

Professional Experience

SunPower Corporation, Richmond CA (Remote)

Staff Software Development Engineer October 2022 - Present
Sr. Principal Software Engineer, Monitoring October 2021 - October 2022
Principal Software Engineer, Monitoring October 2019 - October 2021

- Engineering lead developing and supporting the advanced monitoring platform for SunPower's fleet of solar generation and storage devices.
- Engineering lead for backend and frontend teams developing solar monitoring services for homeowners, dealers, technical support engineers, and performance engineers.

Skills used: Go, Java, Kafka (Streams, Connect, Consumer), Protobuf, InfluxDB, PostgreSQL, AWS serverless compute and storage (IoT Core, Kinesis, Lambda, DynamoDB, S3, SQS, API Gateway, CloudFormation, CloudWatch), Kubernetes (ArgoCD, Skaffold, Helm, AWS EKS), GitHub Actions, Jenkins, Datadog, OSIsoft PI, node.js

XIA LLC, Hayward CA (Remote)

Software Engineering Manager August 2012 - September 2019
Senior Software Engineer August 2009 - July 2012

- Lead software engineer responsible for developing control and configuration applications for commercial x-ray spectrometers and alpha counting instruments. Responsible for all aspects of software functionality and performance including libraries, UI, build system, release engineering, and software support. Integrated new instruments while maintaining a consistent interface and compatibility across instrument generations and driver interfaces.
- Collaborated with staff scientists to design data access and settings for new instruments and modes. Supported sales team and prospects on technical inquiries. Supported OEM and commercial customers throughout application development lifecycles. Isolated firmware/software issues and provided diagnostics to firmware engineers..
- Developed alpha counting acquisition application for the low background product line. Designed control protocols, data formats, and UI. Responsible for UI, acquisition and analysis logic, and controlling peripheral devices with 24/7 acquisition and online analysis of event trace and sensor time-series data. Worked with staff scientists to increase reliability of instrument production, support remote customers, and add an annual maintenance program.
- Wrote the software section of a successful DOE-funded proposal for a high precision network-based triggering system. Collaborated with the PI to design software and develop the work plan. Briefed the PI and chief researcher on the software stack for project reports and DOE presentations. Implemented using C and ZeroMQ on ARM Linux.
- Tracked software design in progress across all projects, reviewed weekly with management.

- Hired, onboarded, and mentored engineers responsible for building the UI for a new x-ray instrument and a driver to support a new gamma product's firmware development.

Skills used: C#, cross-platform C, Reactive Extensions, Ragel, Ruby, Ruby FFI, binary file formats, Mercurial, Waf, Scons, MSBuild, SQLite, WPF, Pandoc, CloudFront, S3, driver signing, Windows Performance Analyzer, ZeroMQ, Wireshark, Windows Subsystem for Linux, Ubuntu, TeamCity

ClickIt Inc, Indianapolis IN

Software Developer November 2008 - August 2009

- Developed retail loss prevention user interfaces and analytics for recorders.
- Captured camera motion analytics via TCP streams to support recorder event tagging.
- Debugged performance issues, improving reliability of always-on, multi-camera video displays.
- Streamlined video export process for easy viewing of evidence in court.
- Supported customers facing issues in stores with offline recorders.

Skills used: C#, native and .NET memory profilers, WPF, WCF, SQL Server

XIA LLC, Hayward CA

Software Engineer January 2007 - November 2008

- Developed control and data acquisition applications for x-ray spectrometers and alpha counters.
- Wrote scripts, utilities, and GUIs supporting in-house research, production, and quality assurance.
- Led conversion from Trac to FogBugz to improve sales and support workflows.

Skills used: C#, C, WinForms, Ruby

Finvi (Ontario Systems), Muncie IN

Systems Analyst June 2002 - December 2006

- Developed a desktop interface for client/server software supporting thousands of concurrent users in high call and transaction volume environments. Responsible for telephone interface integrating dialer and IVR APIs.
- Adapted legacy codebase into a server for GUI clients, transitioning users while maintaining deliverability and performance of the character interface.
- Mentored junior systems analysts.

Skills used: C#, Caché, NUnit

Education

Stevens Institute of Technology, Hoboken NJ

Bachelor of Science, Computer Science, 1998-2002