Shawn Hoover

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Role

Software technical lead experienced in device monitoring and instrument control.

Professional Experience

Principal Software Engineer, Monitoring — October 2019 - Present

SunPower, Richmond CA (Remote)

Leading a team developing the advanced monitoring platform for SunPower's fleet of solar generation and storage services.

Software Engineering Manager — August 2012 - September 2019

Senior Software Engineer — August 2009 - July 2012

XIA LLC, Hayward CA (Remote)

- 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
- 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. Integrate new instruments and variants while maintaining a consistent interface and compatibility for legacy instruments across multiple driver interfaces.
- Collaborate with staff scientists to design settings and data access for new instruments and modes. Support sales team and prospects on technical inquiries. Developed library improvements to ramp up the largest OEM customer. Directly support OEM and commercial customers throughout their application development lifecycle. Isolate firmware/software issues and provide diagnostics to firmware engineers and partners to resolve firmware issues.
- Developed alpha counting acquisition application for the new low background product line. Designed control protocols, data formats, and UI with the product manager. Responsible for UI, acquisition and analysis logic, and controlling several peripherals 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. Currently leading software implementation using C and ZeroMQ on ARM Linux.
- Created software design in progress visual control board, reviewed weekly with management.
- Hired a senior engineer and interviewed a junior engineer. Onboarded and mentored both as they built the UI for a new x-ray instrument and implemented a driver to support a new gamma product's firmware development.

Software Developer — November 2008 - August 2009

ClickIt Inc, Indianapolis IN

- Skills used: C#, native and .NET memory profilers, WPF, WCF, SQL Server
- Developed retail loss prevention user interfaces and analytics for proprietary recorders.
- Designed features with engineering director to pitch new clients at trade shows.
- 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.
- Worked with support staff to troubleshoot customer-facing issues in stores with offline recorders.

Software Engineer — January 2007 - November 2008

XIA LLC, Hayward CA

- Skills used: C#, C, WinForms, Ruby
- 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.

Systems Analyst — June 2002 - December 2006

Ontario Systems, Muncie IN

- Skills used: C#, Caché, NUnit
- Developed a desktop interface for client/server software supporting thousands of monthly recurring users in high call and transaction volume environments. Responsible for telephone interface integrating dialer and IVR APIs.
- Adapted legacy codebase (multimillion LOC) into a server for GUI clients, transitioning users while maintaining deliverability and performance of the character interface.
- Mentored junior systems analysts, including one future director of software engineering.

Personal Projects

- F# desktop GUI library inspired by Elm to explore functional rendering, state transition, and event flow in .NET desktop applications.
- Clojure-based tap tuner application. This project used Java sound APIs to capture audio, then applied an FFT to get the frequency powers and displayed them in a graph. The purpose was to check the tap tune of the banjo rim I built.
- Designed and built a custom openback banjo. I collaborated with a designer and metalworkers to design neck and rim components, built the wood parts from scratch, and finished and assembled the completed instrument.
- Created JavaScript extensions to tweak web sites and automate personal finance.
- Family Mastodon deployment in a VPS. I scripted Ruby/Rails/node.js upgrades and Postgres/media backups in bash.

Education

Stevens Institute of Technology, Hoboken NJ
Bachelor of Science, Computer Science, 1998-2002