Jerren Saunders

// Systems Software Developer
// Apex, NC

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/* Summary */

With over 15 years of experience in software development, I am passionate about identifying opportunities for innovation and breaking through paradigms to create streamlined solutions, resulting in significant efficiency gains and cost savings. My expertise lies in delivering robust applications that meet and exceed client expectations, adapting to the programming language that best fits the customers' needs. I thrive on collaborating with cross-site and cross-functional teams, leveraging my communication skills to synchronize efforts and drive projects forward.

At BlackBerry QNX, I created a web application, using the MEAN stack, which centralized storage, management, and analysis for over 1 million test results weekly. I also set up and maintained the infrastructure of the test labs, including servers, utilities, and automated test frameworks. I initiated monthly cross-site meetings for lab stakeholders, and I was the go-to contact for troubleshooting and resolving problems. I mentored, onboarded, and trained new hires of all experience levels, and I continually aided in efforts to ensure compliance with annual external audits.

/* Experience */

// BlackBerry/QNX/Research In Motion, Cary, NC   February 2010 – March 2024

Senior Systems Software Developer

- Led the conception, design, development, documentation, deployment, and maintenance of the test result management web application (BlackFish).
  - Reduced management and triaging of over 1 million test results weekly from 2 days to less than 2 hours.
  - Utilized MongoDB, Node.js, Express.js, and Angular (MEAN) stack.
- Designed and prototyped the BlackBook web application (using MEAN stack) to streamline the management and sharing of hundreds of development boards.
- Designed, assembled, and maintained lab infrastructure for automated testing.
  - Designated to take on the position of Site Lab Manager, starting May 2024.
  - Played a pivotal role in preparing for annual external security audits.
- Developed JavaScript, Python, and Shell scripts to automate tasks for teams throughout the business unit.
- Launched monthly cross-site meetings for lab stakeholders to promote knowledge-sharing and teamwork.
- Mentored senior design teams in NC State's Computer Science department.
- Trained new employees including co-ops, new grads, and senior level.
- Presented and led Tech Talk sessions with local teams.
- Selected to remain in an elite team during a site-wide layoff (2014).

Software Configuration Management (SCM) Specialist | GateKeeper

- Managed Perforce project branches and conducted smoke-tests.
- Identified optimizations for config specs to reduce workspace size by 75%.
- Created server/client C# .NET applications to enable rapid development of plugins to provide features needed for testing and automating tasks.

// Ericsson Mobile Platforms, Morrisville, NC   September 2005 – November 2009

Software Engineer II

- Designed and developed multiple internal applications and scripts, automating testing and routine tasks.
  - Automated a frequent 12 hour process into a 2–4 hour procedure.
- Managed dozens of servers dedicated to building code and executing tests.

Software Configuration Management (SCM) Specialist | Integrator

- Managed the delivery of new features and bug fixes, ensuring seamless integration from development to customer release.

Other Accomplishments

- Titled "Site Tools Champion" for troubleshooting efforts and serving as key point of contact for tools support, process improvements, and training.

/* Skills */

// Programming Languages

JavaScript	●●●●
TypeScript	●●● ○
Java	●●● ○
C#	●●● ○
Python/MicroPython	●●● ○
Perl	●●● ○
Batch	●●● ○
Bash	●●● ○
C/C++	● ○○○○

// Database Technologies

MongoDB (NoSQL)	●●●●
SQL	●● ○○○

// Web Development

Node.js	●●●●
Express.js	●●●●
RESTful APIs	●●●●
Angular (v8-v15)	●●● ○

// Version Control

Git	●●●●
Perforce	●●● ○

// Cloud

Mongo Atlas	●● ○○○
AWS	● ○○○○

// Additional

VS Code, HTML, CSS, XML, NGINX, regex, JIRA, SNMP, Linux, Windows, WSL, HyperV, MS Office

/* Education */

Computer Engineering, BS
NC State University

Electrical Engineering, BS
NC State University

/* Key Projects */

// BlackFish – Test Result Management Web Application
BlackBerry/QNX/Research In Motion
2017 – 2024

- Led the conception, design, development, deployment, and maintenance phases of this internal tool to manage test results from diverse frameworks and teams across the organization.
  - o Empowered stakeholders to store and analyze over 48.5 million tests during 2023.
  - o Streamlined management and triaging of over 1 million test results weekly from 2 days to less than 2 hours.
- Managed all aspects of the infrastructure including:

MongoDB Replica Set Configuration	Production, Stage, and Test Servers (OS & Hardware)
Node.js Service hosting JavaScript REST API	NGINX Service hosting front end
GitLab Projects & Branches	ES Lint (static code analysis)
Agile Software Development Lifecycle using JIRA	

- Implemented features to monitor performance metrics for identifying issues, bottlenecks, and areas needing optimization, focusing efforts on increasing system efficiency, responsiveness, and scalability.
- Collaborated with 8 teams across the organization to analyze and improve their unique testing methodologies.
  - o Designed an adaptable schema to accommodate various test frameworks and ensure future scalability.
  - o Developed parsing scripts in JavaScript and Python tailored to each team's specific procedures.
- Developed an extensive suite of unit, integration, API, and E2E test cases for the backend system using the Mocha + Chai frameworks, ensuring thorough coverage and resilience of the delivered RESTful interface.

// BlackBook – Hardware Reservation System Web Application
BlackBerry/QNX/Research In Motion
2023 - 2024

- Designed and prototyped a web application to manage the sharing and utilization of hundreds of development boards among the test team and software developers.
  - o Optimized resource allocation and enabled a balance of manual and automated testing.
  - o Compiled feature requirements based on feedback and lessons learned from legacy methods.
  - o Designed using MongoDB, Node.js, Express.js, and Angular (MEAN) stack.
- Collaborated with a team of seniors at NC State University to develop and implement an early prototype.

// ResumeTracker – Mongo Atlas
Self
March 23, 2024 - Current

- Designed and created a Mongo Atlas App Service, the target for https://jerren.info/<Company> short links provided in my resume, to tally visits and then redirect viewers to a custom landing page.
- Developed to expand my experience with Mongo Atlas, build sample code for my online portfolio, and also gauge interest in my resume.
- Source code and documentation may be viewed at https://github.com/jerrens/ResumeTracker.

// Interactive Game System
Side Venture
Current

- Designing and developing a Node.js service to monitor a control board via serial port, decoding proprietary binary messages, storing into a MongoDB, and providing real-time notifications to web clients.
- Leading the design and optimization efforts of the MongoDB database, including defining collections, document schema, and indexing strategies to store captured data, user information, and other system components.
- Assuming sole responsibility for the development and rigorous testing of RESTful interface.
- Providing consultation in the development of both the control board firmware and the Angular front-end dashboard.

// Remote Bug and Log Reporting Tool
BlackBerry/QNX/Research In Motion
2016 – 2017

- Contributed as a member of a team tasked with uploading logs and core dump files from devices undergoing development and field testing.
- Proposed and implemented a system architecture, leveraging AWS services including S3, Lambda, SQS, and SNS.
- Configured AWS services to index uploaded items, queued them for processing, and sent notifications upon availability for analysis.
- Developed a C# application that connected to AWS services to retrieve object summaries, facilitating the review, management, and triaging of reported issues.
- Implemented a caching mechanism to store retrieved objects locally on the intranet, enhancing performance and minimizing costs associated with AWS data transfers and requests.

/* Key Projects (Continued) */

// Data Terminal Server
2010 – 2015

BlackBerry/QNX/Research In Motion
- Designed and implemented a generic C# .NET console application as a reusable component for rapidly creating server-client processes, allowing new functionality to quickly be created as plugins using the framework.
- Developed a suite of plugins to manage test requests, perform remote builds, and execute automated tasks.

// Surge – Current Measurement Scope Application
2007 – 2009

Ericsson Mobile Platforms
- Coauthored a C# application to control, capture, and plot ADC measurements from 16 channels in real-time.
- Authored bootloaders in C for two Atmel processors, enabling firmware updates by end-users.
- Developed scripts to automate the flashing and verification testing of firmware and hardware calibration in the factory, resulting in significant cost savings.

/* Awards */

// Extra Mile Award
- For assisting other employees and groups beyond the scope of normal job responsibility
- Three-time recipient
- Nominated by peers

// Management Award
- Recognition for extra work to establish a collaboration tool for the local site

// STAR Award
- Recognition for dependability
- Three-time recipient
  o Silver & Gold levels
- Nominated by peers and Senior Director of Test and Development