

# Jason Saavedra

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## Summary

- **Certified AWS User** with hands-on experience deploying scalable applications on AWS, including EC2, S3, CloudFront, and more.
- **Full-Stack Developer** with expertise in React, Node.js, MongoDB, Python, and more, building robust web applications.
- **Security-Focused Engineer** skilled in user authentication, SSL/TLS implementation, and secure data handling.
- **Collaborative Team Player** with experience working in cross-functional teams, ensuring high-quality software delivery.

## Education

### PURDUE UNIVERSITY

West Lafayette, IN

May 2024

- BS in Computer Science w/ Software Engineering Concentration, Minor in Psychology
- GPA: 3.21
- Coursework: Database Systems, Software Engineering, Software Testing, Object-Oriented Programming, Data Structures & Algorithms

## Technical Skills

- **Frameworks & Libraries:** React, Angular, Node.js, Vue.js, OpenAI, JUnit, Springboot, RESTful APIs
- **Database Systems:** MongoDB, DynamoDB, MySQL, PostgreSQL, Azure SQL
- **Operating Systems:** Windows, macOS, Linux, Ubuntu, Bash, PowerShell
- **Cloud Technologies:** AWS (EC2, S3, CloudFront, VPC, Certifications), Google Cloud Services (Firebase, Firestore, Cloud API)
- **Personal Skills:** Analytical Problem Solving, Leadership, Communication, Detail-Oriented, Collaborative, Cross-functional

## Experience

### Engineering Computer Network @ PURDUE - IT Service Representative

West Lafayette, IN

Nov 2022 - May 2024

- Developed and maintained **Python** scripts to automate routine tasks, reducing manual workload by 30%.
- Collaborated with Staff Engineer on office tools programmed in **Python**, resolving issues and reducing error reports by 25%.
- Delivered changes through reliable version control with **Git**, maintaining 100% version history and seamless team collaboration.
- Orchestrated system maintenance using **PowerShell** and **Windows Server**, resolving 30+ enterprise-level technical incidents weekly.
- Implemented robust data solutions in **Azure SQL**, maintaining a 20+ year service record database with 99.9% uptime.
- Utilized **agile** methodologies and **Git** for version control, ensuring consistent deployment of system updates and features.
- Communicated technical concepts clearly to non-technical users, achieving a 98% customer satisfaction rating.
- Provided top-notch customer service, resolving 90% of technical issues on the first attempt, exceeding service level agreements (SLAs).
- Implemented **agile** service desk methodologies, maintaining sub-10-minute response times for all support queue items.
- Developed **RESTful APIs** for seamless integration between ticket management system and internal tools, improving workflow efficiency.

## Projects

### Welcome Home Bot - Smart Door Camera Notification System

Aug - Dec 2024

- Engineered a real-time door monitoring system using **Raspberry Pi** and **Python**, achieving 99.9% uptime and instant notifications.
- Implemented facial recognition using **OpenCV** and **face\_recognition** library, processing visitor detection with <95ms latency.
- Developed secure user authentication and real-time notifications using **Firebase Cloud Messaging**, ensuring reliable message delivery.
- Architected a lightweight web interface using **Vanilla JavaScript** and **WebSocket**, enabling real-time video streaming and system control.
- Optimized image processing for low-light conditions using Raspberry Pi Camera Module 3, ensuring 24/7 reliable monitoring.
- Designed a cost-effective solution under \$200, demonstrating strong hardware selection and budget management skills.
- Technologies Used: **Python**, OpenCV, Firebase, WebSocket, JavaScript, Raspberry Pi, Face Recognition.

### Java Database - Comprehensive Database Management System

Jan - Dec 2024

- Developed key components of a database management system (DBMS) based on **Minibase**, enhancing data management efficiency.
- Architected modular **DBMS** components using **OO design patterns** and interface-driven development, enabling extensible architecture.
- Engineered concurrent buffer management achieving sub-millisecond latency through optimized multithreading and parallel transactions.
- Implemented Two-Phase Locking (2PL) transaction management with deadlock prevention, reducing system conflicts by 25%.
- Optimized query performance in **Java** from 10ms to <1ns through systematic benchmarking and storage implementation comparison.
- Established 95% test coverage through **JUnit/Maven** pipelines and comprehensive system metrics collection.
- Benchmarked query execution across three storage implementations, reducing access time from 10 milliseconds to under 1 nanosecond.
- Utilized **JUnit** and **Maven** for automated testing and build processes, increasing test coverage by 55% and ensuring reliable code integration.
- Technologies Used: **Java**, JUnit, Maven, Minibase

### LivIn - University Student Housing Hunter

Jan - May 2024

- Designed intuitive frontend GUIs with **HTML** and **CSS**, improving user experience and navigation speeds by 30%.
- Secured user data using **Google Firebase**, safeguarding personal information for over 150 renter and landlord users.
- Engineered map routes with **Google Maps API** and **JavaScript**, achieving 100% accuracy with public transport paths.
- Implemented **JavaScript/TypeScript** functions, enabling seamless frontend and cloud service integration, boosting response times by 30%.
- Delivered sprint stories on time, maintaining a 95% on-time project delivery rate, consistently meeting deadlines and demoing milestones.
- Implemented **CI/CD** practices using **Git** and collaborated on **Python**-based system administration tools, reducing system errors by 25%.
- Technologies Used: **Vue.js**, HTML, CSS, JavaScript, TypeScript, Google Firebase, Git.

### Sentiment - Public Speaking Practice and Feedback Platform

Jan - Aug 2023

- Developed a user-friendly interface using **React** for video/audio analysis, enhancing user engagement and providing actionable feedback.
- Implemented backend solutions with **DigitalOcean Droplets** in **Python**, ensuring reliable and scalable data processing for users.
- Utilized **Firestore** for scalable a database, storing user profiles, analysis results, and historical data with high availability and performance.
- Deployed the application using **Firebase Hosting**, achieving fast and secure access for users with minimal downtime.
- Enhanced the user experience with responsive design and interactive features, incorporating **Bootstrap** and React components.
- Technologies Used: **React**, Firebase (Firestore, Cloud Functions, Hosting), Python, Bootstrap, **Axios**, Styled-Components