Milind Prajapati

SOFTWARE ENGINEER

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Location: Exton, PA

Summary

Results-driven Software Engineer with 5+ years of experience delivering scalable embedded, cloud-integrated, and full-stack systems. Proven success in architecting high-throughput solutions, including Amazon smart device testing platforms with 99.95% uptime and 8000+ units processed daily. Proficient in Python, C#, Node.js, Rust, and Android, with deep expertise in microservices, CI/CD, embedded firmware (STM32, ARM), and ML-based biometric systems. Adept in Agile environments, leading cross-functional teams, mentoring engineers, and aligning technology with business goals. Passionate about solving complex problems and driving innovation across embedded and distributed systems.

Skills

- **Programming Languages:** Go, Python, Rust, C/C++, JavaScript (Node.js), Java, Shell Scripting
- **Frameworks & Libraries:** React, Django, Spring Boot, ASP.NET Core (.NET 8), Embedded C/C++, FreeRTOS
- **Cloud & DevOps:** AWS (EC2, S3, IAM), Docker, Kubernetes, Terraform, Jenkins, GitLab CI/CD
- **Architecture & Systems:** Microservices, Event-driven, gRPC, Embedded Systems (STM32, ESP32, Raspberry Pi)
- **Databases & APIs:** PostgreSQL, MongoDB, MySQL, Oracle SQL, REST, GraphQL, OpenAPI/Swagger
- **Testing & Methodologies:** PyTest, Selenium, Postman, TDD, Agile/Scrum, Pair Programming

Key Achievements

- **Enhanced Production Efficiency**
  Boosted production efficiency by 20% across 8000+ units using automated test tools and microservices.
- **Maintaining 99.95% System Uptime**
  Updated legacy monolithic architecture to microservices based architecture, which improved system uptime to 99.95%
- **Refined Algorithm Accuracy**
  Improved prediction accuracy in machine learning algorithms from 83% to 90% with advanced PCA techniques.
- **Early Application Delivery**
  Delivered production-ready applications one week early for new product launches, impacting seven sites globally.

Professional Experience

SOFTWARE ENGINEER Nov 2019 – Present
Communication Test Design, Inc *West Chester, PA*

- Architected and deployed scalable hardware-software systems to automate functional testing of Amazon Echo devices.
- Built scalable ingestion and processing pipelines using Kafka and Spark, handling 50K+ daily events.
- Implemented REST and gRPC APIs for real-time analytics dashboards.
- Led migration from monolith to microservices, improving release velocity by 40%.
- Built first-generation infrastructure and CI/CD pipelines to support rapid feature development.
- Developed cross-platform testing frameworks using C#, Python, and Android, boosting compatibility and reducing test cycle time through program optimization, converting monolithic to microservices architecture.
- Experienced with android development and debugging used for Echo devices, Fire TV sticks and Kindle devices.
- Spearheaded Global New Product Introduction (NPI) initiatives, coordinating deployments across international sites and aligning solutions with evolving client requirements, including creation of Bill-of-Materials(BOMs) and much more.
- Designed audio tests and environment for testing audio devices, such that devices are classified based on THD, Rub and Buzz, Frequency amplitudes by performing FFTs on it currently.
- Translated client requirements into robust, scalable testing systems that emphasized performance, reliability, and maintainability. Improved sustaining efforts of the system globally.
- Delivered 20% production gains by creating and integrating automated test tools and designing a scalable microservices system using Node.js for improved gains, with 8000+ units getting processed across 7 sites.
- Led Agile project delivery, adapting to shifting priorities and delivering validated, production apps ahead of NPI launch.
- Mentored 4 engineers, established technical onboarding programs, and led pair programming initiatives.
- **Technologies**: Python, C#, Node.js, Android, Kafka, Spark, REST, gRPC, Microservices, Docker, GitLab CI/CD, FFT, THD Analysis, SQL/NoSQL, ARM Debugging, Cross-Platform Testing, Scalable Pipelines, Audio Signal Processing.

ASSOCIATE SOFTWARE ENGINEER June 2018 - Nov 2019

Nviasoft Corporation *Newark, NJ*

- Partnered with research to prototype and productionize ML models for biometric recognition, transforming experimental algorithms into scalable, production-grade services integrated into the core platform.
- Developed a robust feature extraction pipeline using LDA and SVM for multimodal biometric authentication, resulting in a 25% reduction in false acceptance rate (FAR) on palm vein datasets.
- Managed software deployment, verification, and release processes across networked and off-network environments, streamlining the CI/CD pipeline through GitLab version control and automated deployments
- Engineered core firmware for ARM-based embedded devices, ensuring seamless integration of biometric solutions within resource-constrained environments, using Node.Js, Python and Rust.
- Implemented versioned APIs to ensure backward compatibility and smooth feature rollouts across client applications.
- Designed and implemented localized micro-database structures with cloud-sync capabilities, enabling reliable data persistence and remote accessibility.
- Delivered custom software solutions tailored to client specifications, improving compliance rates by 24%.
- **Technologies:** Python, Rust, Node.js, C/C++, ARM Cortex-M, LDA, SVM, GitLab CI/CD, Docker, REST APIs, Embedded C, RTOS, Scikit-learn, Custom Micro-DBs, API Versioning, Secure Firmware Deployment.

JUNIOR SOFTWARE ENGINEER June 2016 - May 2017

Menza Motors LLC *Ahmedabad, GJ, India*

- Developed core firmware for sensor data acquisition in electric bikes, supporting real-time performance monitoring and diagnostics.
- Engineered a power-saving protocol that extended battery life by 10%, enhancing overall energy efficiency of the bike.
- Migrated communication systems from serial interface to I2C, significantly increasing data transfer speed and system responsiveness.
- Customized U-Boot for STM32 to support OTA updates and secure boot.
- Established communication via CAN bus (motor controller), UART (debug), and I2C/SPI (sensors, BMS).
- Designed a Python-based sensor dashboard with a custom GUI for real-time tracking of performance metrics, temperature, and hazard alerts.
- Prototyped an intelligent control system featuring graphical displays, speed monitoring, accident detection, emergency signaling, and automatic braking — laying groundwork for a smart electric bike platform.
- Built in-system test suite; used logic analyzer and oscilloscope for low-level debugging
- **Technologies:** STM32F4, U-Boot, FreeRTOS, Embedded C, CAN Bus, UART, PWM, GPIO, I2C, SPI, Battery Management, Motor Control, Git, KiCad

Education

MS – Computer Engineering August 2017 - May 2019

New Jersey Institute of Technology *Newark, NJ*

BE - **Electronics and Communication** June 2012 - June 2016

Gujarat Technological University *Ahmedabad, GJ, IN*