Mitesh Prajapati

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Senior Software Engineer with over 6 years of expertise in firmware validation, automation testing, and embedded systems development at Micron Technology and Microchip. Proven track record of optimizing testing lifecycles by designing custom Python frameworks that significantly reduced test execution times. Deeply skilled in C and Python for protocol specification testing (NVMe, UFS based products) and validating critical NAND features against strict industry standards. Adept at leveraging AI tools (ChatGPT, Copilot, Tabnine, Claude) to accelerate workflows and mentoring junior engineers to drive high-quality code delivery in Agile environments utilizing Git, Jira, and CI/CD pipelines

Experience

JUL 2022 – PRESENT
Micron Technology, Bangalore | Senior Software Engineer
Project | Phoenixx Data Center ESSD 6600 ION (QLC/NVME) - 128TB, 256TB capacity

Validated NAND (N69R) flash operations across SLC and QLC modes and implemented automated test scripts for folding mechanisms (Copy-to-Cache (C2C), Cache-to-Device (C2D)) and erase-failure error injection, including functional, cross-feature, and stress reliability tests, identifying 16 critical firmware bugs.

Built a failure-analysis automation agent that takes a failure logs link, automatically downloads the logs, structures them, and runs an intelligent analysis using Claude - cutting down manual debugging time and helping teams identify root causes faster.

Designed and developed cross-feature validation tests for Resets during active I/O operations (sequential, random, and mixed workloads), executing both short and long-running stress tests containing up to 1,200 resets.

Automated 50+ test cases and cutting test time from 8 hours to 2.5 hours (68% reduction) by skipping repeated drive preconditioning and reusing preconditioned drives, allowing these tests to run in short nightly runs and improving coverage.

Collaborated with the firmware team to develop custom scripts for reproducing critical bugs 80% faster.

Hands-on experience setting up Viavi trace analyzer and collecting PCIe traces, enabling the firmware team to find root causes faster, shorten debug cycles

Mentored 2 junior engineers by providing technical guidance on test design practices and conducting code reviews.

Project | Norma UFS 2.2 based Product (TLC) - B68S 4TB capacity

Validated folding operations on NAND by designing test cases and developing 30+ automation scripts to cover different data movement scenarios.

APR 2021 – JUL 2022
Micron Technology, Hyderabad |Payroll Insemi Technology | Software Engineer
Project | eMMC Device Cryptography Module

Led the PVE test suite alongside two engineers, overseeing test development, execution, requirement analysis, feature scoping, coverage analysis, report generation, and presentation of results to higher management.

Developed new test cases aligned with test design specifications for features including authenticated reads and writes.
Managed automation test execution and performed gap analysis to identify and address missing test coverage.
Actively contributed to code reviews to ensure robust, high-quality deliverables.

MAY 2019 – APR 2021
Microchip India, Bangalore | Payroll Insemi Technology | Software Engineer
Project | Excalibur – UEFI Option ROM Package

Developed UEFI-compliant features and protocols adhering to UEFI Specification v2.7.
Enhanced the UefiTestApp by integrating new protocol-testing capabilities using C programming language.
Collaborated effectively with cross-functional teams.

MAY 2018 – MAY 2019
Microsemi technology India, Bangalore | Intern
Project | Excalibur – UEFI Option ROM Package

Worked for Raid controller features unit testing.

Skills

Languages: C, Embedded C, Python.
Tools & AI: Git, Jira, Claude Agents creation, ChatGPT, GitHub Copilot, Tabnine.
Validation: Firmware Testing - Test design and implement, GAP Analysis, CI/CD.
NAND: Backend and FTL
Hardware: High-capacity NAND (4TB to 256TB), Viavi Analyzer, Embedded devices (ESP8266/RPi).

Certifications & Training

APR 2017 – DEC 2018
Embedded Systems Certification Program | Vector India Pvt Ltd., Bangalore
Intensive training covering Embedded Systems Design
Programming languages: Embedded C/C++, Python
Gained hands-on experience with the Raspberry Pi platform

Education

2014 – 2016
Master of Engineering | Electronics & Communication
Sarvajanik College of Engineering & Technology GTU, Surat, Gujarat

2009 – 2013
Bachelor of Engineering | Electronics & Communication
SNPIT & RC Umrakh, Bardoli, Gujarat Technological University