

Michael Hernandez

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SKILLS

Programming Languages: Python, C/C++, Bash, LaTeX

Developer Tools: Git / GitHub, VS Code, VIM, Linux, SVOS

Engineering Skills: Automated Testing, Post-silicon Debugging, Technical Documentation, Test Plan Development, Unit Testing

Frameworks: Jupyter, PythonSV

Spoken Languages: English, Japanese (N3)

EMPLOYMENT HISTORY

Memory Functional Validation Engineer

January 2021 – Present

Intel Corporation

Hillsboro, OR

- Contributed to 8 stepping cycles across four Xeon-class chip programs with x86 architecture, including Granite Rapids and Sierra Forest, covering both pre- and post-silicon validation stages
- Led validation strategy for 5 memory controller features, coordinating across architecture, firmware, and validation teams to execute 200+ test cases across 18 hardware configurations per regression.
- Authored 9 internal wiki pages documenting validation workflows, debug methods, and tooling; these are actively used by 50+ engineers across 28 teams
- Delivered 7 technical presentations in 2025 to align DDR5 and LPDDR5 test strategy across the memory validation organization
- Developed 3 new Python automation scripts to increase test coverage and reduce manual QA effort; maintained or contributed to 15+ validation scripts used across multiple product teams
- Authored a 28-page technical manual documenting validation script functionality, usage workflows, and troubleshooting steps to support cross-team QA and debugging efforts
- Used Bash, Python, and SVOS tools to capture VISA traces, automate test flows, and validate system-level performance and feature correctness
- Regularly partnered with architecture, design, and embedded firmware teams to debug failures, refine coverage, and validate hardware-design alignment
- Responsible for writing test plans for all owned features to ensure complete validation as defined by the cross product matrix

PROJECTS

Memory Bandwidth Research | *Python, Git, Data Analysis*

- Led an Intel-sponsored research project to evaluate memory controller throughput using a proprietary traffic generator
- Developed a Python-based tooling stack comprising 4 scripts to automate data parsing, aggregation, and visualization
- Collected and analyzed data from 80 unique test cases across 11 hardware configurations, including variations in BIOS settings, memory density, and security modes
- Collected over 2,400 samples per test run using MSRs, enabling detection of bandwidth anomalies and configuration-sensitive behaviors
- Deployed tools using Intel's automated validation infrastructure, improving repeatability and enabling reuse across other platforms
- Published a detailed 164 page whitepaper with findings and methodology; referenced by multiple validation and architecture teams

Bash Script Generator API | *Python, Bash, SVOS, Doxygen*

- Developed a Python-based API to generate automated Bash scripts for debugging workflows, enabling use by engineers with no prior bash scripting knowledge
- Integrated automated error checking and step validation for multi-stage functions, improving script reliability and reducing manual debug time
- Authored detailed technical documentation using Doxygen, including usage examples and workflow descriptions, and published to the internal wiki to support cross-team integration.
- Implemented platform reboot logic with resume functionality to ensure continuous test execution

EDUCATION

Oregon Institute of Technology

Bachelor of Science in Electrical Engineering

Wilsonville, OR

Graduated June 2020