

Om Prakash Singh

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Experience

Software Engineer 2 (Device Validation)

Microsoft

Hyderabad, India

June 2024 – Present

- Developed PowerShell-based test automation frameworks for AI camera features in Windows Studio Effects across IHVs; reduced test suite run time by 40%, saving 15+ hours weekly
- Built EdgeOptimizer AI agent for real-time tracking of on-device model power usage and CPU/NPU utilization, enabling performance optimization for Windows AI workloads
- Led validation for WSE v1 releases; contributed to Copilot+ PCs by building API-level validation pipelines for on-device AI features across Intel, AMD, and Qualcomm NPU platforms
- Implemented semaphore-based synchronization for concurrent multi-model execution and performed deep concurrency profiling using WPR/WPA traces to resolve timing bottlenecks
- Integrated content moderation into Phi models for Copilot; enhanced code coverage by 25% and maintained 99% pipeline reliability across 10+ release cycles

Emulation Engineer (Pre-Silicon Validation)

Intel

Bangalore, India

July 2021 – June 2024

- Owned firmware integration for ADR (Asynchronous DRAM Refresh) flow in CXL interface and low-power entry/exit scenarios across Xeon platforms
- Developed 10+ PCIe Gen6 transactor enhancements in C++ and created Perspec-based test content for reset and power management validations
- Validated idle PM and reset flows across emulation stages with Simics and Zebu platforms; diagnosed and triaged 15+ cross-IP bugs involving silicon interface failures
- Contributed to 25% reduction in post-silicon bugs by improving validation coverage and accelerating triage using AI tools

Software Engineer

L&T Technology Services

Bangalore, India

Sep 2018 – July 2021

- Designed and implemented modular Python automation suite for thermal and power management of NVMe storage platforms with 25+ test scenarios
- Conducted post-silicon debugging using JTAG and Metaware; performed NVMe 1.3 protocol validation using Lecroy analyzers and OakGate exercisers
- Collaborated with FW and validation teams to resolve 10+ power-related issues, ensuring spec compliance across firmware revisions

Education

- **M.Tech in Computer Science & Engineering**, National Institute of Technology, Durgapur – 2018
- **B.Tech in Computer Science & Engineering**, RGPV, Bhopal – 2015

Technical Skills

- **Languages:** Python, PowerShell, C, C++, Perl
- **AI/ML:** ONNX Runtime, Phi Models, Content Moderation APIs
- **Tools:** JTAG, WinDbg, WPR/WPA, Metaware, VS Code, AppVerifier, Simics, Zebu
- **Technologies:** Windows Internals, PCIe, CXL, NVMe, SOC Architecture, Power Management
- **Domains:** AI/ML System Validation, Pre-Silicon Validation, Device Testing, Storage Protocols

Awards & Recognition

- Microsoft: Performance optimization (40% test time reduction), Copilot+ PC validation infrastructure
- Intel: Star of the Month for CXL firmware validation and early bug discovery
- L&T/SanDisk: Spot Awards for SDExpress POC validation