Nischit Hosamani

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EDUCATION

Nanyang Technological University, Singapore Aug 2026 - Dec 2027 (expected)

MSc in Artificial Intelligence. Semester 1 coursework (Aug 2026): Machine Learning, Deep Learning, Computer Vision, Introduction to AI, AI Ethics.

Indian Institute of Technology Indore, India Aug 2020 - May 2024

B.Tech in Computer Science and Engineering, Minor in Astronomy. GPA: 8.6/10. Courses: Computer Vision, Reinforcement Learning, Machine Learning, Computational Intelligence, Optimization Algorithms and Techniques, Linear Algebra and Ordinary Differential Equation-I, Complex Analysis and Differential Equations-II, Data Structures and Algorithms, Design and Analysis of Algorithms.

EXPERIENCE

Flipkart Jul 2024 - Jul 2026

Software Development Engineer - I *Bangalore, India*

- Built cross-org fee-adjustment platform across 11 PnP microservices using Java and Dropwizard, coordinating 5 teams to deliver INR 1B estimated annual impact and INR 72M realized bottom-line in first month.
- Migrated and stabilized 6 Apache Storm clusters processing Kafka streams into Aerospike DB, re-allocating topologies by criticality to increase free slots 47%, cut disk utilization 40%, and drop alerts 75% over one month.
- Implemented client-level rate limiting at network filter layer using Guava wrapper across 4 PnP services for Big Billion Days readiness, reducing network hogging 15% during peak sale traffic.
- Re-architected coupon application flow across 3 services solo, introducing decorator-chain design pattern for My Coupons API refactor and increasing apply-coupon click-through rate ~50%.

Athabasca University May 2023 - Aug 2023

MITACS Global Research Intern *Edmonton, Alberta, Canada*

- Developed full-stack chatbot editor in PHP, JavaScript, and Python, rewriting component-grouping algorithms to increase website loading speed 40% and expand functionalities from 5 to 16.

PROJECTS

MCP-Forge: Autonomous Multi-Agent Pipeline for REST API Compilation Aug 2026

- Built compiler and self-healing core for 5-agent pipeline compiling OpenAPI specs into verified FastMCP servers using Python, Daytona SDK, Pydantic, and Kubernetes, deploying with multi-stage Docker builds gated by pytest and Playwright tests.

OmniRec: Autonomous ML Research Agent for Recommender Systems Aug 2026

- Built multi-perspective attribution module of a 6-person framework achieving 37.9% step-attribution accuracy on tau retail benchmark and 25.0% on magentic, against published AgentRx baseline 31.0% and 18.2%.

Fused Online Softmax in CUDA Oct 2026

- Implemented three fp16 row-wise softmax kernels in CUDA C++ with PyTorch C++ extensions, warp-level shuffles, shared memory, and fp16/__half2 arithmetic, profiling all in Nsight Compute.
- Achieved 17% faster online-softmax kernel at S=16,384 moving 6.00 bytes/element against 7.99 baseline; FlashAttention-inspired kernels reached 94% DRAM bandwidth peak and ran 1.9x faster than torch.softmax.

TrackX: Real-Time Browser Hand Tracking Aug 2026

- Built real-time hand tracking in browser using MediaPipe HandLandmarker WASM runtime with GPU delegate, per-landmark adaptive jitter filtering, live FPS HUD, and containerized deployment via Kubernetes with health probes.

PUBLICATIONS

- Aditya Dixit, Nischit Hosamani, Puneet Gupta, Ankur Garg. "VISIONARY: Novel Spatial-Spectral Attention Mechanism for Hyperspectral Image Denoising." WACV 2025 (submitted 2024); IEEE Xplore Digital Library, Apr 2025.

SKILLS

Languages: Python, C++, Java, JavaScript, Bash/Shell, MATLAB, PHP

ML & Quantitative: PyTorch, TensorFlow, CUDA, XGBoost, Monte Carlo simulation, genetic algorithms, statistical hypothesis testing (SPRT), bootstrap confidence intervals, REINFORCE, McNemar test, Wilson intervals

Data & Compute: Pandas, NumPy, Scikit-learn, MediaPipe, OpenCV, warp-level primitives, memory-bandwidth-bound optimization, FlashAttention mechanics, Nsight Compute

Infrastructure & Systems: Kubernetes, Docker, Kafka, Apache Storm, Aerospike, RabbitMQ, Redis, MySQL, CI/CD, Git, Maven, Dropwizard, Guava, Istio, Grafana

Testing & Evaluation: JUnit, Mockito, pytest, Playwright, Jest, Nsight Compute, benchmark design, fault-injection design, experiment reproducibility