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, delivering INR 1B estimated annual impact and INR 72M realized bottom-line in first month.
- Designed Monte Carlo scorer with bootstrap confidence intervals for counter-drone defence planner, screening 20,000 candidate defences in 5 seconds and cutting planning time from 30s to 12s versus genetic algorithm.
- Implemented three CUDA kernels for fused online softmax including 2-pass online-softmax with warp shuffles and shared-memory row-cached kernel, achieving 17% faster memory throughput at S=16,384 versus baseline.
- Migrated and stabilized 6 Apache Storm clusters processing Kafka streams into Aerospike DB, reducing alerts 75% and increasing free slots 47% through topology re-allocation and Grafana monitoring.
- Co-authored VISIONARY spatial-spectral attention model for hyperspectral image denoising published at IEEE/CVF WACV 2025, achieving SOTA PSNR 48.9 dB and boosting downstream classification accuracy from 71% to 91% on Indian Pines dataset.

Athabasca University May 2023 - Aug 2023

MITACS Global Research Intern *Edmonton, Alberta, Canada*

- Rewrote component-grouping algorithms for AI chatbot editor using PHP, AJAX, JavaScript and Python, increasing website loading speed 40% and expanding functionalities from 5 to 16 over 12-week internship.

PROJECTS

TrackX (browser-based hand tracking) Aug 2026

- Implemented real-time hand tracking in browser using MediaPipe HandLandmarker WASM runtime with GPU delegate, custom One Euro filter, Jest unit tests, Playwright end-to-end tests, and nginx CSP headers.

Fused Online Softmax in CUDA Oct 2026

- Profiled three CUDA softmax kernels in Nsight Compute diagnosing memory-bandwidth behaviour, with online-softmax kernel moving 6.00 bytes/element against 7.99 baseline (17% faster) at S=16,384.

OmniRec (Autonomous ML Research Agent) Aug 2026

- Built autonomous ML research agent with LLM-as-judge evaluation using REINFORCE and McNemar statistical testing, achieving 0.6168 KuaiRand-Pure score versus 0.5946 baseline across 170,888 test predictions.

MCP-Forge (Daytona HackSprint 2026) Aug 2026

- Developed multi-perspective attribution module for multi-agent LLM fault attribution using XGBoost surrogates trained on 60,000 simulated fights across 1,250 raids, screening 20,000 candidates in 5 seconds.

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, Java, JavaScript, C++, CUDA C++, Bash/Shell, MATLAB, PHP

ML & Quantitative: PyTorch, TensorFlow, CUDA kernel programming, Monte Carlo simulation, bootstrap confidence intervals, REINFORCE, statistical hypothesis testing (McNemar, Wilson intervals), XGBoost, genetic algorithms, SPRT, warp-level primitives, memory-bandwidth-bound optimization, FlashAttention mechanics, online softmax, Nsight Compute profiling

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

Computer Vision & Research: Vision Transformers, attention mechanisms, MediaPipe, OpenCV, Scikit-learn, Pandas, NumPy, academic writing, experiment reproducibility, benchmark design, fault-injection design