

Yash Nishit Kapadia

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Professional Summary

- Full-stack ML builder: Ship production systems that pair Next.js frontends with Django/DRF services, PostgreSQL/Redis backends, and evaluated ML tied to business KPIs (pricing, demand, savings).
- ML foundations & theory (ECE421): Hands-on with linear/logistic regression, SVMs, MLPs/backprop & deep learning, PCA, k-means, GMM/EM, strong grounding in generalization error bounds, bias–variance, VC/PAC learning, regularization and cross-validation for robust model selection.
- Computer Organization & Architecture (ECE352): Systems skills across single/multi-cycle & pipelined datapaths and control, memory hierarchy (SRAM/DRAM, caches, virtual memory), interrupts & memory-mapped I/O (UART, timers), branch prediction, OOO/renaming, SIMD/VLIW/vector and GPGPU—informing hardware-aware, performant backend design.

Technical Skills

- Languages: Python, C, MATLAB, Java, Swift, Kotlin
- ML / Data: scikit-learn, TensorFlow, PyTorch, NumPy, pandas, linear & logistic regression, SVM, MLP/backprop & deep learning, PCA, k-means, GMM/EM, time-series forecasting, demand elasticity/WTP, NLP sentiment, OCR
- ML Theory: generalization error bounds, bias–variance trade-off, VC dimension, PAC learning, regularization and validation/cross-validation
- LLMops / GenAI: OpenAI API, RAG and vector databases, prompt engineering, Azure AI Service, AWS Bedrock & SageMaker, Databricks, local LLMs
- Web / Backend: Django, Django REST Framework, Flask, Next.js, HTML/CSS/JavaScript
- Data Engineering: Airflow, Spark, data pipelines and transformation, data lakes
- Datastores & Caching: PostgreSQL, Redis, SQLite
- Cloud & DevOps: Docker, CI/CD (GitHub Actions), AWS/GCP, monitoring and performance analysis
- Payments & Tax: Stripe and international tax (GST/VAT) integration
- Identity & Security: OAuth/SSO, encrypted QR profiles
- Computer Organization & Architecture: assembly (NIOS V), single-/multi-cycle & pipelined datapaths, control units, bus interfaces, memory-mapped I/O, interrupts (UART/timers), caches & virtual memory, branch prediction, out-of-order execution & register re-naming, SIMD/VLIW/vector & GPGPU
- Tooling: Git, GitHub, Jira, CAD, ModelSim/SystemVerilog, NIOS V toolchain, FPGA/DE1 SRAM interface exposure

Experience

Software Developer · Internship · UofT Summer Co-op

May 2025 – Aug 2025

J K Computers
Mumbai, India

- Led full-stack development of a B2B QR-code travel operations app for easier flight booking and support using Next.js and Django/DRF on PostgreSQL with Redis caching.
- Built cheapest-flight and cheapest-date prediction from historical fares and search behavior, added consumer-behaviour prediction and segmentation to tailor offers and save customers money.
- Maintained each consumer profile in encrypted QR codes scanned at support and booking touchpoints, streamlining lookups and reducing handling time.
- Merged product with business by implementing monthly revenue and demand forecasting, willingness-to-pay estimation, and demand elasticity to inform pricing and promotions.
- Implemented feedback insights using sentiment analysis to summarize themes and prioritize actions for business owners.
- Delivered payments as a service by integrating Stripe for cards, subscriptions, and refunds and implemented international tax and GST compliance with invoicing.
- Shipped owner dashboards for KPIs, forecasts, and savings, containerized services with Docker, set up CI/CD, and deployed to cloud.

Software Developer · Internship

May 2024 – Aug 2024

Optima Diamond Tools Private Limited (ODTPL)
Baroda, India

- Designed and shipped a barcode-driven inventory system (*Optimyse*) enabling real-time inflow/outflow tracking and analytics for Supply-Chain and Finance.
- Implemented a Flask and JavaScript stack with SQLite and Google services, integrating Google APIs and SSO for secure, centralized access.
- Automated data cleaning and reconciliation with NumPy/pandas to improve reporting accuracy and turnaround time.
- Ran Agile sprints in Jira and enforced branching and PR discipline to safeguard release quality.
- Delivered stakeholder demos and user trainings to accelerate adoption across technical and non-technical groups.

FungiFits: Mushroom Transport Container · Praxis II Team Project

Jan 2024 – Apr 2024

University of Toronto
Toronto, Canada

- Led iterative engineering design to scope a community-focused logistics solution under real-world constraints.
- Prototyped 2D bin-packing in Python to optimize spatial layout subject to material and handling limits.
- Produced CAD prototypes to communicate design decisions and de-risk fabrication steps.
- Coordinated team workflows and presentations to align stakeholders and document trade-offs.

CIV102 Bridge · Team Project

Nov 2023

University of Toronto
Toronto, Canada

- Explored structural alternatives to predict failure modes and iterate toward higher safety factors.
- Simulated loading in MATLAB and generated SFD/BMD to minimize material while meeting test criteria.
- Fabricated a matboard bridge to validate calculations under lab testing conditions.
- Documented results to improve analysis repeatability and peer review.

Artificial Intelligence App Development · Internship

May 2023 – Jul 2023

Xerago
Chennai, India

- Built OCR proof-of-concept applications across Java, Python, Swift, and Kotlin to evaluate mobile and backend pipelines.
- Investigated NFC and blockchain integrations to assess feasibility for product prototypes.
- Collaborated in cross-functional sprints to deliver demos on schedule and incorporate feedback.

Certifications & Training

Large Language Model Operations (LLMOps) — Specialization

Aug 2025

Duke University (Coursera)
Online

- Deploy, manage, and optimize LLMs on Azure, AWS (Bedrock/SageMaker), Databricks, and local setups, build RAG apps with vector DBs and prompt workflows, containerized CI/CD.

Python 3 Programming — Specialization

Nov 2020

University of Michigan (Coursera)
Online

- Python 3, data structures, OOP, APIs, debugging, and a software-engineering capstone.

Education

BASc in Engineering Science (Machine Intelligence Major)+ PEY Co-op

Sep 2023 – Apr 2028 (expected)

University of Toronto
Toronto, Canada

- Relevant coursework: Computer Programming (Python/C), Calculus I–II, Linear Algebra (Matrices, MATLAB), Ordinary Differential Equations (numerical ODEs), Praxis (design, CAD), Circuits, Digital and Computer Systems (SystemVerilog, ModelSim), Machine Learning (Regression, SVMs, PCA), Computer Organization (pipelining, caches, MMIO), Matrix Algebra and Optimisation (QR/SVD, convex opt.), Foundations of Computing (Data Structures and Algorithms, NP), Signal Analysis and Communication (LTI, Fourier, sampling).

Extracurricular

Executive of Finance — Desi Students' Association, University of Toronto — Toronto, Canada Oct 2024 – Present

Alumni Judge — Vaels International Business Event (VIBE) — Chennai, India Aug 2024, Aug 2025

Chief Editor · Alumni Mentor — Vaels International School — Chennai, India Jul 2021 – Aug 2023

Volunteer — Little Hearts — Chennai, India May 2022