

Ishaan Patel

Raleigh, NC

ishbhagat02@gmail.com | linkedin.com/in/ishaan1402 | ishaan1402.github.io | github.com/ishaan1402

SKILLS

Languages: Python, C++, Java, C#, C, JavaScript, SQL

ML & AI: PyTorch, OpenCV, Transformers, NumPy, Pandas, Scikit-learn, LangGraph

Cloud & DevOps: AWS, Azure, Docker, Kubernetes, PostgreSQL, Linux

Frameworks & Tools: FastAPI, FastMCP, .NET, React, Spring Boot, Git

EXPERIENCE

PROMETHEUS GROUP • Software Engineer

Aug 2024 - Jul 2025

- Developed features and resolved defects across the flagship project management product in C# .NET and React; refactored legacy components using Domain-Driven Design while collaborating with stakeholders on sprint planning and requirements.
- Cut sprint regression time by 40% as sole owner of the flagship product's automated testing framework (C# .NET, Playwright, RestSharp, GitLab CI/CD), with 100+ API tests gating pull requests to main and 30+ UI and 10 smoke tests running nightly.
- Deployed production hotfixes from automation alerts and mentored QA engineers transitioning to SDET roles.

FIDELITY INVESTMENTS • Software Engineer Intern

Jun 2023 - Aug 2023

- Developed a Java Spring Boot service for 401(k) transaction processing using a layered DAO/service architecture with ORM persistence patterns; configured Jenkins CI/CD and migrated the codebase from Bitbucket to GitHub.
- Designed API endpoints to route data via Azure Service Bus with dead-letter queue workflows, improving pipeline throughput and reducing message latency.

UNIVERSITY OF NORTH CAROLINA CHARLOTTE • Undergraduate Researcher

Jan 2023 - Jan 2024

- Adapted Microsoft's ALEX learned index to dynamic graph workloads in C++, encoding edges as bitwise-concatenated 64-bit keys; benchmarked insertion and traversal performance against STX B+ tree and graph-optimized formats (CSR, VCSR, PCSR, BAL) across 10 real-world SNAP graphs on the UNCC HPC cluster.
- Parallelized PageRank, SSSP, BFS, and 1-hop workloads with OpenMP across 1-32 threads, measuring up to 20x speedup; quantified tradeoffs to show learned indexes adapt to graph workloads but are not yet competitive with graph-optimized formats.

FIDELITY INVESTMENTS • Software Engineer Intern

Jun 2022 - Aug 2022

- Built REST APIs and Java AWS Lambda functions for the Fidelity Bloom debit card roundup feature, validated with JUnit and CloudWatch.
- Provisioned infrastructure with AWS CloudFormation (S3, SQS, Lambda, KMS) and deployed via Jenkins and UrbanCode pipelines.

PROJECTS

Upwind • Real-Time Air Quality Intelligence getupwind.me | github.com/Ishaan1402/upwind

- Deployed full-stack app that explains why US air quality spikes by combining AirNow monitor data, Open-Meteo weather, and NASA fire hotspot data into ranked cause hypotheses.
- Architected FastAPI backend with rate-limited APIs, SQLite, and GitHub Actions CI/CD; React/MapLibre frontend with live map and LLM-generated briefings via OpenAI SDK.

Pathfinder • Decoupled HPO Supervisor for Deep Learning github.com/Ishaan1402/pathfinder

- Built a hyperparameter optimization (HPO) framework using FastAPI and Optuna with sub-20ms suggestions, early stopping, and out-of-memory recovery, plus CLI and web dashboard for experiment analytics.
- Designed a read-only MCP interface so IDE agents can inspect trial history, health tiers, and hyperparameter importances on demand; the optimization loop never blocks on or depends on an LLM.
- Optimized SQLite with write-ahead logging for concurrent broker, dashboard, and MCP access; added secure tunneling for remote Colab/cloud GPU workers.

crack-seg • UAV Bridge Crack Segmentation github.com/Ishaan1402/crack-seg | hf.co/ishaan1402/crack-seg

- Built a custom U-Net with sliding-window inference for UAV bridge crack segmentation, achieving 92% recall and 0.89 F1.
- Deployed to Hugging Face and presented at the 2026 NCSU AI Student Symposium as an academic poster; tuned with Pathfinder to a 0.747 validation Dice score.

EDUCATION

NORTH CAROLINA STATE UNIVERSITY • M.S. in Computer Science, ML/AI Concentration

Aug 2025 - May 2027

GPA: 3.78

UNIVERSITY OF NORTH CAROLINA AT CHARLOTTE • B.S. Computer Science, Software Engineering

Aug 2020 - May 2024

GPA: 3.85 | Magna Cum Laude | Chancellor's List