Hemnaath Balasubramani

AVAILABLE FOR CO-OP · JANUARY 2027

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EDUCATION

Northeastern University — Khoury College of Computer Sciences — Boston, MA
Master of Science in Computer Science — Jan 2026 — May 2028 (expected)

Related coursework: Programming Design Paradigm (Java), Database Management Systems

Sathyabama Institute of Science and Technology — Chennai, India
Bachelor of Engineering in Computer Science — Jul 2020 — May 2024

Related coursework: Data Structures, Object-Oriented Programming, Databases, Software Engineering

EXPERIENCE

EPAM Systems — Hyderabad, India
Junior Software Test Automation Engineer · Client: leading global rideshare platform (Fares team) — Jul 2024 — Dec 2025

- Owned and extended the Go test suite for the Fares team's pricing engine across most of the platform's city footprint; triaged daily failures, fixed flaky cases, and added regression coverage as new pricing rules shipped.
- Verified per-city pricing behavior end-to-end: surge / crowded-area multipliers, vehicle and service-tier variations, and multi-currency conversion across markets.
- Migrated legacy test suites to Cucumber and TestNG, tightening CI/CD integration and reducing flaky failures across regression runs.
- Drove daily root-cause analysis with developers on failing tests, raising coverage on the pricing engine and shortening time-to-fix on regressions.
- In the latter half of the role, was part of a team building an AI agent that generates test cases directly from user stories, SRS, and FSDs — built on EPAM's internal LLM and in-house agent-creation platform. Demoed end-to-end; pending senior approval at the time I left.

PROJECTS

BedRocked — Civic Sewer-Sequencing Platform — Jun 2026
Cyvl × Autodesk × NVIDIA × City of Boston Physical-AI Hackathon · Python, FastAPI, scikit-learn, Anthropic Claude, Autodesk APS, Vercel · sewershed-bedrocked.vercel.app

- Built a 0–100 dig-readiness score for all 2,404 of Somerville's still-combined sewer segments by fusing Cyvl's AI street-scan data with public sewer GIS through a 6-factor weighted model; shipped a public Vercel deployment in a single day.
- Trained a catch-basin condition classifier via knowledge distillation — Claude Vision labeled 112 marker-cropped basin photos as teacher, a distilled student classifier then scored all 381 basins city-wide, replacing per-asset frontier-model calls with cents-per-asset inference.
- Wired a natural-language search backed by Claude (strictly scoped to the dataset; refuses off-topic queries) and an Autodesk handoff that exports the dig-plan as a priority-layered DXF and renders it in 3D through the Autodesk Platform Services Viewer.

Job Searcher — Multi-User LLM-Based Job-Matching Web App — 2026 — Present
Python, FastAPI, MongoDB, OpenAI SDK, DigitalOcean · jobs.hemnaath.tech · github.com/hemnaath04/job-searcher

- Built and deployed a multi-user web app that anyone can use: users upload a resume, click search, and the system pulls postings from public job boards, scores each against the resume via an LLM, and surfaces matches in the UI with per-match reasoning.
- Built a parallel fetcher and streaming scoring pipeline with atomic MongoDB worker claims; fetch time dropped from ~2 min to ~10 s, and matches stream into the UI live as the LLM scores each one.
- Hardened the API (magic-byte validation, rate limits, signed sessions, loopback-only backend behind nginx + TLS) and wrote idempotent Bash deploys with end-to-end Python smoke tests.

Infant Cry Sound Detection System — Deep Learning Audio Classifier — Jan 2024 — May 2024

- Built a deep generative learning model with statistical feature embedding to classify infant cry types from raw audio for early-diagnosis applications; led peer debugging and code review on the audio preprocessing pipeline.

TECHNICAL SKILLS

Languages	Python, Java, Go, R, SQL, Bash
AI / ML	LLM Integration, AI Agents, Retrieval-Augmented Generation (RAG), Computer Vision, Knowledge Distillation, Prompt Engineering, Embeddings, OpenAI / Anthropic SDKs, scikit-learn
Backend & Data	FastAPI, REST APIs, Async Python, Streaming Pipelines, API Authentication, MongoDB, PostgreSQL, GeoJSON, Spatial Joins
Testing & CI/CD	Selenium, TestNG, Cucumber, Pytest, Jenkins, Postman, GitHub Actions
Infrastructure & Docs	Docker, Linux, nginx, systemd, DigitalOcean, Vercel, Autodesk Platform Services, Git, Tableau, LaTeX
Certifications	Machine Learning (Internshala) · The Joy of Computing Using Python (NPTEL) · Python Core (Sololearn)
Interests	Multi-sport zonal/district medalist (shot put, football, badminton); cricket officiating in India