

NIKHIL BALAMURUGAN

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SUMMARY

Third-year Computer Science student building backend and AI systems: tool-calling LLM agents, hybrid retrieval pipelines, and the evaluation and safety layers that keep them reliable. Active open-source engineer with 1000+ contributions, 88 merged pull requests across personal, team and community repositories, 50+ contributor PRs reviewed and merged as a maintainer, Top 100 in Social Winter of Code and a GSSoC mentor. Seeking software engineering internships.

TECHNICAL SKILLS

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

Web & Backend: Next.js, React, FastAPI, Node.js, Tailwind CSS, REST APIs, PostgreSQL, Supabase, SQLite, Docker, Vercel.

AI & Agents: Gemini, Groq and Sarvam AI APIs, tool-calling agents, hybrid retrieval (BM25 + dense), Playwright browser automation, versioned prompts, LLM evaluation harnesses

ML: PyTorch, TensorFlow, scikit-learn, transfer learning

Practice: Git & GitHub, code review, CI/CD, unit & integration testing (pytest, Vitest), database-enforced idempotency

PROJECTS

Drishiti - Voice Web Agent for Blind Indian Users | *TypeScript* | *Playwright* | *Sarvam AI*

Sep 2026 – Present

github.com/Nikhil210206/Drishiti

- Building solo a voice agent that operates websites for blind users in 11 Indian languages, using Sarvam Saaras v4 speech recognition, a Sarvam-105B tool-calling agent and Bulbul v3 speech output, with Playwright driving the browser.
- Wrote a page model that compresses any page into a ~300–900-token outline and infers names for unlabeled controls from icon classes and visual labels, so it works on inaccessible sites without changes.
- Added a deterministic safety gate (spoken confirmation before payments, passwords and OTPs never typed, page content treated as untrusted) and a 40-task end-to-end eval suite replayed offline from recorded cassettes.

OneClick - Grounded Troubleshooting Engine | *Python* | *FastAPI* | *Gemini* + *Mistral* | *Next.js*

Sep 2026

github.com/Nikhil210206/OneClick

- Built (Samsung PRISM GenAI Hackathon 2026) a pipeline turning vague complaints into verified one-tap device fixes: hybrid BM25 + dense retrieval grounds a multi-stage LLM pipeline across Gemini and Mistral, served in under 300 ms via semantic caching, with an ablation and load-test eval suite.

Recoup - Autonomous Revenue Recovery Agent for Razorpay | *Python* | *FastAPI* | *PostgreSQL* | *Docker*

Aug 2026 – Sep 2026

github.com/Nikhil210206/Recoup · [Live demo](#)

- Built an agent that detects revenue at risk and executes a bounded recovery workflow: HMAC-verified webhooks feed a classifier over 26 error codes, and a governance layer enforces budget, contact caps and quiet hours. Closed two real recovery loops end to end in Razorpay test mode.
- Scoped the LLM by measurement: a deterministic taxonomy picked the right action on 9 of 11 causes versus 3 of 11 for the LLM, so the model only handles unseen error codes, behind a guardrail it cannot override.
- Wrote a reproducible 12,004-case eval harness (chronological splits, counterfactual attribution, bootstrap confidence intervals); database-enforced idempotency and an append-only audit log keep every action traceable.

EXPERIENCE & LEADERSHIP

Trainee | *Amazon ML Summer School 2026 (Top 2% selected)*

June 2026 – Aug 2026

- Selected nationally for a 4-week curriculum covering supervised learning, deep neural networks, dimensionality reduction, unsupervised and sequential learning, reinforcement learning, generative AI & LLMs, and causal inference.
- Engaged with Amazon scientists and researchers through interactive sessions and Q&A forums.

Trainee | *Samsung Innovation Campus*

June 2026 – Present

- 420-hour applied AI/ML program covering machine learning, retrieval-augmented generation (RAG) and generative AI

Web Development Head | *SRM Insider Community*

Jul 2026 – Present

- Lead the community's web team: ship full-stack features, set review standards, run API deployment sessions for 50+ students.

Project Admin (#1 Ranked Project) | *Open Source Connect India*

Aug 2025 – Sep 2025

- Ran the top project (issue triage, PR review, releases); also maintained Fit You, an open-source Fitness recommender with 50+ contributor PRs merged.

EDUCATION

B.Tech, Computer Science & Engineering | *SRM Institute of Science & Technology, Kattankulathur*

Aug 2024 – 2028

CGPA: 9.21 / 10.00 · Coursework: Data Structures & Algorithms, Operating Systems, DBMS, OOP, Linear Algebra, Probability & Statistics

ACHIEVEMENTS & CERTIFICATIONS

Vision2Web 2026 (CTech, SRM) - 2nd Place · InnoHack 2026, VIT Vellore - 2nd Place, AI/ML Track · HackFusion 2026 - Finalist · The Big Code 2026 (Google) - Semi-finalist, top ~1,500 · Social Winter of Code 5.0 - Top 100 of 5,000+ · GSSoC 2025 - Mentor

Certifications: Oracle AI SQL (in progress) · LLM Evaluation & Customization (NVIDIA) · Oracle OCI AI Foundations · Java (NPTEL IIT Kharagpur, Elite + Gold) · OOP (NPTEL IIT Roorkee, Elite + Silver)