Vinayak Tiwari

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EDUCATION

University of Southern California, Los Angeles, CA Jan 2025 – Dec 2026 (expected)
M.S. in Computer Science, GPA 3.6
Relevant Coursework: Analysis of Algorithms, Database Systems, Information Retrieval, Machine Learning for Data Science

Guru Tegh Bahadur Institute of Technology (GGSIPU), Delhi, India Dec 2020 – Jun 2024
B.Tech in Computer Science and Engineering, GPA 9.1/10.0

SUMMARY

M.S. Computer Science student at USC who builds reliable full-stack software: REST APIs, relational database design, and Dockerized deployments. Won the AI Coding Project track at Hack the Coast 2026 and designed join-aware SQL retrieval over a 30-table relational schema.

WORK EXPERIENCE

inMorphis, Associate Software Engineer Jun 2024 – Dec 2024
React, Node.js, SQL, Python, Docker, GitHub Actions

- Developed 3 customer-facing feature modules in React and Node.js, implementing frontend and backend functionality through code review and production release
- Profiled and optimized legacy SQL queries and added covering indexes on high-traffic tables, reducing API response latency by 35% on enterprise endpoints
- Designed CI/CD pipelines with GitHub Actions and Docker, replacing a manual multistep release process and cutting deployment time by 25%
- Extended PyTest coverage across backend services as part of a team-wide testing push, raising repository coverage from 74% to 92%

inMorphis, Software Engineering Intern Dec 2023 – May 2024
ServiceNow, REST Integrations, AngularJS, Automated Test Framework

- Integrated third-party monitoring tools with ServiceNow via REST webhooks, auto-generating incidents from alerts and cutting resolution time by 20 minutes per incident
- Built Service Portal widgets with AngularJS and Bootstrap, adding client-side validation and guided field prompts to the self-service request flow

PROJECTS

ihatepsm.com Drupal-to-Static Migration (freelance) Aug – Oct 2026
Python, Eleventy, Cloudflare Workers, Git, CI/CD

- Migrated a 590-page, 11-year-old site off end-of-life Drupal 7.28, exposed to three publicly exploited RCE and SQL-injection CVEs, to a static Eleventy site on Cloudflare, preserving 621 of 621 legacy URLs with zero downtime

PopSight Sourcing Tool, Hack the Coast (UC Irvine) Apr 2026
Python, FastAPI, React, PostgreSQL, Docker

- Shipped a full-stack sourcing tool with a 3-person team, winning the AI Coding Project track at Hack the Coast
- Dockerized the full stack with Docker Compose and a one-shot data-load command, adding deterministic fallbacks for when the external API was rate-limited

Schema-Aware Text-to-SQL Retrieval Service, USC Viterbi Dec 2025
Python, SQL, FastAPI, Qdrant

- Designed schema-aware retrieval over a 30-table relational schema, indexing table descriptions, join-path relationships, and synonyms for join-aware SQL generation
- Built a Python FastAPI service over Qdrant retrieval, defining API contracts that let a 6-person team build generation and agent components in parallel with retrieval
- Team system on this retrieval layer reached 100% accuracy (20/20 SQL, 10/10 metadata) vs. 55% baseline

TECHNICAL SKILLS

Languages:	Python, C++, SQL, JavaScript, HTML, CSS
Backend & Data:	FastAPI, REST APIs, PostgreSQL, SQLite, Relational Schema Design, Docker, Git
Libraries:	Pandas, NumPy, Scikit-learn, PyTorch, TensorFlow/Keras
AI / LLM:	RAG, Vector Databases (Qdrant), LangGraph, Anthropic & Gemini APIs, Prompt Engineering