

Gokulnaath Govindaraj

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EDUCATION

Master of Science, Computer Science | **Wright State University**
Bachelor's in Mechatronics Engineering | **Anna University**

December 2025
April 2022

SKILLS

Languages: Python (production backend) · SQL (PostgreSQL) · JavaScript (Node.js APIs)
Backend & Systems: Flask · Node.js (Express) · Spring Boot (Java) · Gunicorn (multi-process concurrency) · RESTful API design · backpressure & worker tuning
Data & Storage: PostgreSQL (schema design, indexing, transactions, connection pooling) · MongoDB (CRUD workloads)
Performance & Reliability: k6 load testing · tail-latency (p95) analysis · throughput optimization · timeout & saturation failure modes
Infrastructure: Docker · GitLab CI pipelines · AWS RDS (PostgreSQL)
Frontend (Supporting): React + TypeScript (internal tooling)

EXPERIENCE

AriesView, Boston, MA

Software Engineer – Intern

August 2025 – Present

- Owned performance validation for Flask APIs, running sustained k6 load tests (~2k RPS, 800 concurrent requests) and diagnosing throughput collapse caused by SQLAlchemy connection pool exhaustion under Gunicorn.
- Reduced p95 latency by 9× (1.8s → 200ms) and decreased timeout-related 5xx errors from 1.2% to 0.1% by correctly sizing Gunicorn workers to PostgreSQL connection pool limits on an 8-vCPU deployment.
- Eliminated write-time race conditions under high contention (50 concurrent clients) by replacing read-then-insert logic with atomic INSERT ON CONFLICT transactional upserts.
- Integrated retrieval-augmented generation into analyst workflows, reducing query fallback errors by 30% on financial and lease documents through grounded, citation-backed retrieval.
- Implemented document-processing pipelines (OCR ingestion, document-aware chunking, hybrid retrieval) to improve accuracy on numeric- and clause-sensitive queries.
- Refactored internal React + TypeScript tools to support breaking backend API changes, maintaining data consistency under frequent refresh cycles.

Accelerate UConn NSF I-Corps Program, Hartford, CT

Technical Contributor

August 2024 – September 2024

- Defined technical requirements and backend architecture for a peer-mentoring platform, aligning product needs with a Spring Boot implementation plan and API-first design for scalable feature delivery.
- Led development direction for an LLM chatbot using prompt engineering and Spring AI integration, improving review clarity and team execution by producing implementation notes that raised code review efficiency by 15%.

Porter Lee Corporation, Schaumburg, IL

Programming Intern

May 2024 – August 2024

- Engineered RESTful API endpoints (GET, POST, PUT, DELETE) for an Android Evidence Management System, optimizing JSON payload handling to improve mobile data refresh speed by 20%.
- Implemented JWT-based authentication and asynchronous background operations with multithreading to prevent UI blocking, enabling reliable automated sync cycles and improving refresh consistency by 20%.
- Created clear developer documentation for 5 core API endpoints, reducing onboarding time for new engineers by 35% through faster integration and fewer implementation questions.

Cognizant Technology Solutions, Chennai, TN, India

Programmer Analyst Trainee

September 2022 – February 2023

- Completed Core Java, JavaScript, and XML training with hands-on Selenium automation, applying test design and execution to identify and help resolve 5 critical defects while strengthening QA workflows.

PROJECTS

Applied AI Engineer | Financial Document Intelligence & RAG System

- Built a document intelligence and question-answering system for tax records, pay stubs, and lease agreements using a Retrieval-Augmented Generation (RAG) approach.
- Implemented PDF ingestion with OCR and structured parsing, applied section-based and semantic chunking, and used hybrid retrieval to feed grounded context into an LLM with citation-aware outputs.
- Enabled reliable, source-backed answers for numeric and clause-sensitive questions while reducing unsupported responses.

Full-Stack Developer | GeoSyncra Navigation Platform

- Developed a navigation platform with a Spring Boot backend and PostgreSQL to support routing workflows and location-based queries.
- Built REST APIs for routing, designed a geo-indexed PostgreSQL schema, containerized services with Docker, and deployed via Railway with iterative backend improvements.
- Increased routes served per day by 25%, improved data retrieval speed by 35%, and reduced average query latency by 25%.

ML Engineer | Multiple Disease Prediction System

- Created an ML prediction system to classify disease risk from symptom inputs using multiple supervised learning models.
- Trained and tuned Decision Tree, Random Forest, MLP, and KNN models, using Dask and GridSearchCV for parallel hyperparameter optimization and building a production-style inference module.
- Improved model performance by 30% and achieved 85% positive feedback during beta evaluation based on clinician input.