

SARANSH SHARMA

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Education

Rutgers University

Sep 2022 – May 2024

Master of Science in Computer Science

CGPA: 3.8/4

Relevant Coursework: Data Structures and Algorithms, Artificial Intelligence, Database Management Systems, Machine Learning, Mathematics for Data Science, Computer Vision, Computer Networks, Data Mining

- **Teaching Assistant:** Mentored 250+ students in Data structures, algorithms and RDBMS

Technical Skills

Languages & Tools: Python, SQL, JavaScript, REST APIs, GraphQL, C++, Java, HTML, CSS

Databases: MySQL, PostgreSQL, MongoDB, Chroma

Cloud: Docker, Kubernetes, AWS

Frameworks & Tools: FastAPI, ReactJS, Pydantic, LangChain, Ollama, Django, NodeJS, Postman

CI/CD: Git, Gitlab

Experience

Incedo Inc. *Software Engineer Intern*

May 2025 – Present

- Built a Retrieval-Augmented Generation (RAG) pipeline using Ollama, ChromaDB, LangChain to power natural language Q&A over internal structured Root Cause Analysis data
- Developed a modular app to support JSON & CSV data ingestion, enabling flexible and reproducible workflows
- Enhanced UX by adding chat context awareness and an option to switch between local and cloud inference modes
- Building a SQL agent to improve retrieval over numerical data and using a hybrid approach to improve quality and accuracy of generated responses

Blue Sigma *Software Engineer Intern*

Sep 2024 – May 2024

- **Gathered functional requirements** with product owners, ensuring clear alignment of technical and business goals
- Built a robust backend in **Python & Django**, exposing RESTful APIs for user authentication and data retrieval
- Created frontend components, enabling users to interact with large data sets & access real-time visualizations, **reducing page re-renders by 15%** to increase user productivity
- Containerized deployments, ensuring consistency and **reducing deployment failures by 20%**

VigilanceAI LLC *Software Engineer Intern*

Jan 2022 – Apr 2022

- Collaborated with engineers to design and deploy a CNN-RNN model for object, activity, and posture recognition, integrating the model into a production ready web application for real-time detection with an accuracy of 97%
- Maintained and helped develop a full-stack web application using JavaScript, Node.js, **React.js** and **MongoDB** to create dynamic front-end interfaces for multiple components
- Used **RESTful APIs** to facilitate seamless communication between the front-end, back-end, database, and ML models

Projects

Receipt Processor 🔗

- Built a RESTful API using **Python** and **FastAPI** to process JSON receipt data and compute reward points using rule-based logic, with modular design separating routing, validation, and business logic
- Enforced strict **input validation using Pydantic** with regex constraints and **custom error handling** for consistent and informative validation responses and **reduced invalid request processing by 100%**
- Containerized the application using Docker and designed the service to be stateless, scalable. Tested using Swagger UI and integration tests written using **Pytest**, **increasing test coverage by 60%**

HL7 Message Parser 🔗

- Engineered a Python based **CLI parser** to convert HL7 messages - a standard used widely in healthcare systems for appointment scheduling - into structured **JSON** using custom segment logic and Pydantic-based schema validation.
- Containerized the application using Docker for reproducibility, implemented structured logging for traceability, and authored unit tests to validate parsing and data integrity.

Better, Smarter, Faster 🔗

- Simulated a circular graph environment with 3 entities-Agent, Prey, and Predator. The prey moved probabilistically, while the agent was optimized to catch it, and the predator moved greedily toward the Agent.
- Implemented **Markov Chains**, designed a custom **Neural Network** and compared them to optimize the Agent's decision-making, reducing the time to catch the Prey by 5%.