SHUBHAM GATTANI

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SUMMARY

Full-stack developer with expertise in Python, Flask, and Vue.js; experienced in building scalable web apps and AI integrations

EDUCATION

Bachelors in Data Science and Applications   *Sept 2021 – August 2025*
Indian Institute of Technology Chennai, Tamil Nadu
CGPA: 9.8

B.Tech in Textile Technology   *July 2014 – April 2015*
Indian Institute of Technology Delhi   *(discontinued due to a spine injury)*

TECHNICAL SKILLS

Languages: Python, JavaScript, SQL
Frameworks: Flask, Vue.js, Langchain
Developer Tools: Git/Github, VS Code, Jupyter
Libraries: pandas, NumPy, scikit-learn, SQLAlchemy, SciPy, nltk

EXPERIENCE & Projects

LLM intern at Sudha Gopalkrishnan brain centre, IIT Madras   *May 2024 – Oct 2024*

1. **Automated the process** which can retrieve the content of 1000s of XML files from pubmed website, extract the neuroscientific entities (using lexifuzz_ner) and create informative JSON files for each paper.
2. Used **python's multiprocessing** library to simultaneously process 1000s of papers which reduced the processing time by **90%**.
3. Used **prompt engineering** to extract the relationships between the identified entities, which were later used to create **Knowledge Graphs in Neo4j**

Data Analyst at Industrial Consultancy & Sponsored Research (IC&SR), IIT Madras   *Jan 2025 - Present*

1. **Discourse-viz Web Application |** Python, Flask, Jinja2, Google Auth, API, Pandas, Altair-viz,, HTML, Javascript, Caching, Data Pipeline, Web scraping, Data Visualisation, threading, cron
   - Built a sophisticated web application for Educational Analytics that transforms raw Discourse forum data into meaningful insights, featuring automated & asynchronous data processing, real-time analytics, and interactive visualizations for tracking user engagement across multiple courses and trimesters **(App demo)**
   - Implemented a simple yet effective scoring algorithm with log normalization and weighted metrics that automatically calculates user engagement scores, identifies trending topics, tracks first responders, and provides insights for IIT Madras to measure and improve student participation in online discussions

2. **RAG based ChatBot |** Groq API, Llama-3,Retrieval-Augmented Generation (RAG), Vector Store, Document Chunking
   - Developed a secure, document-driven support chatbot leveraging Retrieval-Augmented Generation (RAG) and Llama-3 to deliver context-aware answers from institutional documents.
   - Implemented novel chunking strategy to reduce the context size hence saving number of input tokens by **75%**

3. **Dashboard for SPOC** | Flask,SQLAlchemy,Vue.js,PostgreSQL,Flask-Security-Too,Bootstrap,Flask-Migrate, Component-based Architecture, Blueprint Pattern
   - Built a full-stack web application using Flask backend and Vue.js frontend that manages college partnerships, student enrollments, course registrations, and faculty assignments with secure authentication and authorization for admin, SPOC, and faculty roles.
   - Created a normalized relational database schema using SQLAlchemy ORM with PostgreSQL, implemented database migrations using Alembic/Flask-Migrate, and established Data Modelling between colleges, users, students, courses, and academic activities while ensuring data integrity and scalability. **(App demo)**

CERTIFICATIONS

[Microsoft Azure Fundamentals](#) AZ-900 2023 Microsoft - I766-9738