

Abhigna Vadlamudi

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Aspiring software engineer with a strong academic foundation in computer science and proven hands-on experience through internships and complex academic projects. Eager to build robust backend systems and scalable web applications by applying a deep understanding of data structures, system design, and cloud-native development.

Education

University of Houston

Master of Science in Computer Science

Houston, TX

May 2025

Relevant Coursework: data structures algorithms, deep learning, operating systems, system design, cloud computing

GITAM

Bachelor of Technology in Computer Science and Engineering

India

April 2023

Skills

Languages: Java, Python, SQL, JavaScript

Backend: Spring Boot, FastAPI

Databases: MySQL, PostgreSQL, Oracle, Redis

Tools & DevOps: AWS, Git, Docker, Microsoft Dynamics CRM

Analytics: Power BI, Tableau

Academic Projects

Multiformat Document Chatbot

Python, Streamlit, FAISS, LangChain, openpyxl, python-pptx, PyMuPDF

- Built a document chatbot that accepts PDF, Excel, and PowerPoint files, **extracts** content, and performs **summarization** and question-**answering** using local vector **embeddings** (FAISS).
- Designed modular **text parsing** pipelines for structured (Excel), unstructured (PDF), and visual (PPT) formats.
- Implemented a Streamlit UI enabling document **upload**, and **semantic search** Q&A via a LangChain RAG pipeline.
- Optimized **chunking strategy** and embedding quality to support fast retrieval from documents up to 45 pages.
- Currently extending to support **image** input to handle scanned documents.

High-Concurrency E-Commerce Cart System

Java, Redis, SpringBoot, Docker

- Designed a scalable shopping cart **microservice** handling 500+ concurrent sessions using Redis for session state and optimistic **locking** for data consistency.
- Deployed with Docker and implemented **retry** mechanisms to gracefully handle race conditions and API contention.
- Simulated **load** using and achieved 99.9% **uptime** under stress test scenarios.

TubePulse: YouTube Analytics on AWS

AWS Lambda, Athena, QuickSight, Glue, S3, PowerBI

- Built a **cloud-native** analytics tool for parsing and visualizing YouTube data.
- Automated **ingestion** and **transformation** using Glue, Athena, reducing manual data handling by 40%.

Real-Time Order Tracker

Python, FastAPI, PostgreSQL, WebSockets, Docker

- Designed a real-time order status tracking system that simulates food delivery updates from kitchen to customer.
- Implemented a REST API with FastAPI and real-time updates using **WebSockets** for frontend listeners.
- Used PostgreSQL to manage order **lifecycle**, courier assignment, and location logs.
- Dockerized the service and tested **reliability** under 1000 **simulated** order updates.
- Optimized** data model to reduce read/write **latency** for high-volume queries.

Professional Experience

Eitacies Inc. - Backend Developer Intern

March - May 2022

- Engineered backend **microservices** using Java Spring Boot and Kafka, decreasing server response times by 150ms, identifying **memory leaks** and improving overall application performance for daily active users.
- Developed **Python ETL** pipelines with Pandas and SQL, orchestrating data extraction from 10+ disparate sources, improving data availability and **data accuracy** across reporting dashboards.