Abhishek Rajgaria

(Open to Relocate)

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Summary: Graduate researcher with a strong interest in **AI/ML applications**, backed by research experience in Generative AI, Large Multimodal Models, and Deep Learning. Brings 2+ years experience in Backend & Full-Stack Development, having worked on microservices, distributed systems and cloud native applications. Familiar with system design and software development life cycle.

Education

University of Utah — Salt Lake City, Utah, USA
MS. **Computer Science** | Graduate Teaching Assistant | **GPA: 3.96/4.0** — Aug 2023 - May 2025
Coursework: Distributed Systems, Natural Language Processing, Advance Artificial Intelligence, Deep Learning, Manage Data for ML

IIIT-Delhi — Delhi, India
BTech. **Computer Science with Applied Mathematics (Honors)** | GPA: 8.72/10 — Aug 2017 - Jun 2021
Coursework: Data Structures & Algorithm, Object Oriented Programming, Machine Learning, Computer Vision, Operating Systems

Skills

Programming Languages: Python, Java, C++, C#, Go, JavaScript, Bash, HTML5, CSS3
Full Stack & Frameworks: RESTful APIs, Spring Boot, GraphQL, .Net, React, Redux, Node.js, Django, FastAPI, Streamlit
Databases & Cloud: AWS, Kubernetes, MySQL, PostgreSQL, MongoDB, Redis, Elasticsearch, ChromaDB
ML & Visualization: Pytroch, LangChain, Prompting, Scikit-Learn, Matplotlib, Plotly, Microsoft Excel
Tools & Technologies: Git, Linux, Docker, Jenkins, Apache Kafka, Apache Spark
Certificate: AWS Partner: Accreditation (Technical) **Software Practices:** Agile methodology, DRY, A/B Testing, Code Review

Professional Experience

Graduate Researcher | Coral Lab, ASU | under Dr. Vivek Gupta — Jun 2024 - Feb 2025

- Generated a 3,000+ map-based QA benchmark across USA, India, and China using Plotly, revealing 20–50% gaps in large vision language models and hallucination in counterfactuals scenarios. Accepted at NAACL'25 with Best Paper nomination (arXiv)
- Developed an adaptive reasoning method for LLMs, improving performance by 2–10% on 8 temporal table QA tasks (under review).

Associate Software Development Engineer | Publicis Sapient, Gurugram — Aug 2021 - Aug 2023

- Tech Stack: Spring Boot, GraphQL (BFF), Kafka, React, Apollo Client, i18next, AWS EKS, Terraform, Docker
- Built invoicing and onboarding microservices for a NeoBank using event-driven architecture; improved onboarding time by 30%. Delivered full testing coverage including unit, integration, and E2E tests to ensure system reliability.
- Designed an advanced filter and comparison page for a vehicle e-commerce site and implemented REST APIs with encrypted data. Launched using blue-green deployment on AWS EKS ensuring near 100% uptime during deployment.
- Constructed frontend for a Student onboarding platform, which will be used by 270K+ classroom with multilingual support. Led integration of GraphQL APIs with Apollo Client caching and localization for 2 languages, improving user inclusivity and engagement.

Undergraduate Researcher - (Data Science work) | Midas Lab, IIIT-Delhi — Jun 2021 - Aug 2021

- Cleaned OCR errors in 7M legal documents from case.law, recovering 60% of missed citations (15%) using NER and regex. Streamlined the ETL pipeline using Beautiful soup and storing metadata in Elasticsearch index.

Publication

MAPWise: Evaluating Vision-Language Models for Advanced Map Queries - Srija Mukhopadhyay, **Abhishek Rajgaria**, Prerana Khatiwada, Manish Shrivastava, Dan Roth, Vivek Gupta

Projects

Neuro-Symbolic Product Recommendation System (Amazon review dataset) (Github Link)

- Enhanced user history coverage for 60% of users using the Apriori Algorithm on co-purchased items. Introduced a logic-based constraint into training loop as a contrastive loss, using user reviews to improve recommendation relevance.
- Created a hierarchical prediction model based on product categories, overall achieving a 3-8% gain from 3 approaches.

Distributed Storage with Consensus and Fault Tolerent - Raft in Go (Github Link)

- Implemented Raft-based leader election, log replication, and persistence ensuring fault tolerance and state recovery with 4s leader fail over and 5-6 RPCs/sec heartbeats, for a linearizable key-value store with Goroutines.

Data Analysis & Forecasting on Citi Bikes Rental (Github Link)

- Cleaned and analyzed 5M+ ride records (2014-2024), uncovering trends and forecasting demand using Facebook Prophet. Leveraged Apache Spark with a 2-node setup for large-scale data processing and Matplotlib for visualizing Exploratory Data Analysis (EDA)

Data Cleaning using LLM (Github Link)

- Worked on large tabular data imputation using textual documents, finetuning T5 large with QA pairs extracted from functional dependencies in high-confidence rows. Stored embedded documents using LangChain in Chroma DB.
- Retrieved data using RAG methodology, comparing the outputs of two options with an LLM, attaining 72% improvement.