Tushita Singh

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Education

University of Massachusetts-Amherst — USA
Master of Science (MS), Computer Science — Sept 2022 - May 2024
Relevant Coursework: Software Engineering, Advanced Algorithms, Machine Learning, Artificial Intelligence

Indian Institute of Information Technology, Nagpur — India
Bachelor of Technology (BTech), Computer Science — July 2016 - July 2020
Relevant Coursework: Data Structure, Software Engineering, Operating systems, Data Analytics, Database Management

Experience

Blueprint Medicines — Cambridge, MA
Software Engineer Intern — May 2023 – Dec 2023
- Optimized an in-house tool by implementing a feature that streamlined the loading of experiment data onto the servers, reducing data loading times by 80%. This enhancement also facilitated accurate record-keeping of data entries and edits.
- Collaborated with cross-functional teams using AWS containers to develop and deploy tools for automated data analysis, improving user experience and data accuracy.
- Spearheaded the adoption of Power BI dashboards among teams, increasing user adoption by 40% and reducing data discrepancies by 80%.

Tata Consultancy Services (TCS) — Pune, India
Software Engineer — Sept 2020 – Sept 2022
- Conducted in-depth analysis using NLP libraries to predict and normalize ingredient weights for recipe generation in cosmetics data, achieving templates with a notable 63% recall and 70% precision. Extracted diverse insights into recipe components.
- Leveraged GraphQL to expedite ingredient analysis, resulting in a 70% reduction in ingredient selection time for formulated products recipes.
- Engineered a scalable Flask-based software product to streamline ingredient selection, reducing time by 30-40%.

Software Engineer Intern — Sept 2019 – Dec 2019
- Created data processing pipeline of unstructured text from formulated recipes (Pdf/Textbooks), extracting semi-structured data for analysis.
- Applied data mining techniques to analyze processed text, identifying key ingredients with a precision rate of 85% and a recall rate of 78%. Delivered recommendations instrumental in designing a new variant, enhancing decision-making processes.

Projects

Large Language Models for Improved Clustering — Jan 2024 – May 2024
- Crafted a robust framework harnessing feedback from a finely-tuned large language model, integrating pre-processed data to generate contextualized sentences. This approach facilitates seamless interaction with LLM APIs, enhancing the training efficacy of smaller embedding models.

Large Language Models for Healthcare data — Jan 2024 – May 2024
- Formulated actionable next steps for patient diagnosis through analysis of patient history compared with doctor notes, facilitating informed decision-making in clinical practice.

Topic-Based Query Paraphrasing to improve document retrieval — Sept 2022 – Dec 2022
- Improved document retrieval for user queries using Topic-modeling and Sentence BERT for domain-specific query expansion. I developed and evaluated learning-to-rank models to enhance retrieval effectiveness.

Elevation-Based Navigation(ELeNA) — Sept 2022 – Dec 2022
- A Java application that, given a start and end location, computes a route that maximizes or minimizes the elevation gain and limits the total distance between the locations to 'x'% of the shortest path. Engineered comprehensive test cases to fortify the testing framework and ensure validation accuracy.

Skills & Interests

Technical: Pytorch, Advanced NLP models, Information Retrieval algorithms, Artificial Intelligence, Azure, AWS, Database Management, Microservice Architecture, Springboot, Splunk
Language: Python, C#, C++/C, Javascript, Typescript, JAVA, HTML/CSS, ReactJS, SQL, Go, PHP
Analytics: R, Matlab, Power BI, Tableau, Cognos, Snowflake, Data Analytics, Postgres