Mohd **Uwaish**

Student · Full Stack AI Engineer

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Skills

Programming Languages	Python, C, JavaScript, PL/SQL
Web Frameworks & Libraries	Django, Flask, Streamlit, React, NextJS
Data Manipulation	Numpy, Pandas, SQL
Data Visualisation	Plotly, Matplotlib, Seaborn, Tableau
Databases	MySQL, MongoDB, SQL Server, ChromaDB, Pinecone
Machine Learning Libraries	Sci-Kit Learn, PyTorch
RAG Systems	LangChain, LangGraph, LlamaIndex, RAGAS, LLM Integration, Prompt Engineering
Natural Language Processing	NLTK, Word2Vec
Model Deployment	Git, GitHub, Docker, AWS, Heroku

Experience

Niedersächsische Staats-und Universitätsbibliothek Göttingen
Göttingen, Germany

Student Assistant - Software Developer — *01/09/2024 – Present*

- Developing the **DFG-funded digital library** web portal for **Bibliothek der Neologie** platform using Next.js, implementing hybrid critical edition features for scholarly research and bilingual (German/English) content management.
- Performed detailed **pull request reviews** to ensure code quality, maintainability, and adherence to project standards, facilitating seamless collaboration and reducing integration bugs.
- **Authored and maintained** clear and structured technical documentation component usage, and project workflows, significantly improving team productivity and knowledge transfer.
- Utilizing version control (Git) and collaborating through GitLab, while working with CI/CD pipelines to streamline the development process and ensure code quality.

Georg-August-Universität Göttingen
Göttingen, Germany

Student Assistant - Department of Economics — *01/02/2024 – Present*

- Developing user friendly economics experiments using the frontend technologies and django based **oTree framework**.
- Implementing **chat and video communication** features to enhance facilitating participant interaction, experimental realism and data collection.
- Conducting **data analysis** for the experiments, employing statistical methods and visualization techniques to derive insights.

Tata Consultancy Services Private Limited
New Delhi, India

Data Analyst and Software Engineer — *08/09/2021 – 10/04/2023*

- **Developed** full-stack data analytics solutions for the PENALTY module of the Income Tax Business Application (ITBA) using Java, PL/SQL, Oracle Database, Tableau, and react.JS, resulting in a **23% increase** in user engagement and a **17% reduction** in processing time.
- Designed and optimized ETL pipelines and PL/SQL workflows to transform large-scale tax data for Tableau dashboards, achieving a **62% improvement** in report generation time and **18% faster** database response through advanced query tuning.
- Collaborated with cross-functional teams to implement predictive segmentation logic and migrated legacy components toward a modern, cloud-ready architecture, contributing to **9 successful** change requests and mentoring peers to reduce bug rates by **30%**.

Education

Georg-August-Universität Göttingen
Göttingen, Germany

Master of Science - MS in Applied Computer Science with Specialization Data Science — *01/04/2023 - PRESENT*

- Grade: 2.1 (Till now)

Guru Gobind Singh Indraprastha University
New Delhi, India

Bachelor of Technology - BTech, Computer Science and Engineering — *01/05/2017 – 30/05/2021*

- Completed the degree with 8.01 CGPA out of 10.
- Thesis: Eth-Ocracy : Ethereum Blockchain based Voting System

Projects

HybridRAG: Text Information Extraction from Geochemical Research Papers

Math Information Retrieval Seminar

GITHUB LINK

27/11/2025 – Present

- Designed and implemented a novel Hybrid Retrieval-Augmented Generation (HybridRAG) system combining vector-based semantic retrieval with graph-based structured knowledge extraction
- Developed a dynamic query classification mechanism to optimize retrieval strategies based on query intent, improving contextual accuracy by 23% over baseline methods
- Engineered a Neo4j knowledge graph pipeline capturing geochemical relationships between elements, isotopes, and minerals for enhanced reasoning capabilities
- Implemented comprehensive evaluation framework with 11 metrics assessing both retrieval quality and response generation
- Demonstrated significant improvements in factual correctness, semantic similarity, and noise reduction for complex scientific queries compared to traditional RAG systems

Google Chrome Extension

Web Browser Extension

GITHUB LINK

23/11/2024 - Present

- Built a cross-platform Chrome extension (ReactJS + Chrome APIs) for real-time sensitive image detection on Facebook, Instagram, and X (Twitter).
- Developed a Flask-based backend hosting a fine-tuned BEiT model (F1 score: 77.48%) trained on 12K+ labeled images from the SensitivAlert Pic dataset.
- Integrated frontend-backend via Base64 image encoding and REST API, with asynchronous communication using Chrome's messaging system.
- Designed interactive UI with prediction results, override dialog, and feedback form; user feedback stored in MongoDB for model improvement.
- Implemented auto-retraining pipeline triggered at 50+ flagged samples using active learning and augmentation (cropping, color jitter, rotation).

Meeting Summarization Testbench

NLP Evaluation and Analysis Project

GITHUB LINK

25/11/2023 - 31/03/2024

- Developed a comprehensive testbench for evaluating and analyzing the performance of meeting summarization models on transcripts.
- Implemented a dataset augmentation pipeline utilizing Hugging Face and open-source models to diversify the training data with 17 different augmentation techniques.
- Designed a full stack system using Django Rest framework and HTML,CSS, Javascript allowing users to upload summarization models via Hugging Face links for detailed evaluation.
- Conducted metric evaluation including ROGUE, BLEU, BERTscore, and linguistic analysis such as type-token ratio, Coleman Liau index, and coverage to assess summary quality.
- Utilized visualization techniques including histograms and charts to present evaluation results in an easily interpretable format.
- Integrated user-friendly interface for seamless interaction, enhancing usability for researchers and practitioners in the NLP domain.
- Implemented with Python libraries such as Hugging Face, Pandas, and Plotly, ensuring scalability and flexibility for future enhancements.
- Contributed to advancements in meeting summarization research, with potential applications in decision-making and knowledge dissemination across various sectors.

Digital Danke Schön: Blog and Consultancy web application

Blog and Consultation Portal

DIGITALDANKESCHOEN.COM

01/05/2023 - PRESENT

- A full-stack web application utilizing Django, JavaScript, HTML, CSS, and Bootstrap. Deployed on AWS cloud platform.
- Created an interactive platform for administrators to publish blog articles, fostering user engagement through like, comments and replies.
- Implemented features enabling users to schedule one-on-one consultation sessions, enhancing sudy abroad aspirants' user experience and engagement.
- Designed the website to facilitate the posting of diverse opportunities by administrators, including study abroad choices, job listings, and scholarships.