Utkarsh Gogna

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Education

Northeastern University, Boston, MA   **Sept 2023 – Present**
Master of Science in Computer Science
Relevant Coursework: Machine Learning, Natural Language Processing, Data Structures and Algorithms, Database Management Systems, Web Development.

Vishwakarma Institute of Technology, Pune, India   **June 2021**
Bachelor of Technology in Computer Engineering
Relevant Coursework: Data Structures and Algorithms, Operating Systems, Computer Systems Architecture.

Professional Experience

Infosys Pvt Ltd, Pune, India   **Feb 2022 – July 2023**
Systems Engineer - Digital Data AI/ML (Amex)
- Enhanced data processing by 30% by developing and deploying machine learning models using **Python** and **Scikit-learn**.
- Increased insight generation by 25% by coordinating with cross-functional teams to implement **Natural Language Processing** techniques.
- Reduced processing time by 40% by streamlining operations through automating data pipelines with **Python** and **AWS (S3)**.
- Managed project timelines and ensured seamless **CI/CD** integration by utilizing **MLflow** for model tracking and deployment.
- Improved overall system efficiency by collaborating with stakeholders to integrate **AI solutions** into existing systems.

Northeastern University, Boston, MA   **Sept 2024 – Present**
Teaching Assistant – Machine Learning
- Developed course materials on machine learning algorithms and probabilistic models, enhancing the learning experience for 95 students.
- Improved project completion rates by 20% by mentoring students in **Python** and machine learning projects.
- Increased student performance by 15% by facilitating lab sessions and providing constructive feedback.

Sagitec Solutions Pvt Ltd, Pune, India   **Feb 2021 – June 2021**
Application Developer Intern
- Boosted processing efficiency by 25% by directing data migration to a cloud environment using **AWS**.
- Enhanced client satisfaction by 30% by developing client-specific applications with **Python** and **RESTful APIs**.

Sagitec Solutions Pvt Ltd, Pune, India   **May 2019 – June 2019**
Intern
- Automated employee payoff calculations and reduced administrative workload by 30% by managing the development and launch of an **ETimeTracking** portal using **JavaScript** and **React.js**.

Projects

AI-Enhanced Cybersecurity Threat Detector   **Dec 2024 – Present**
Remote   Github Code
- Detected anomalies in network traffic data with 98% accuracy and 97% F1-score by designing and implementing a hybrid deep learning model combining **BERT** and numeric feature analysis.
- Reduced false positives and enhanced model performance by integrating textual and numerical features.
- Developed a scalable pipeline for training, evaluating, and deploying machine learning models using **PyTorch**, **Hugging Face Transformers**, and **AWS**.
- Enabled actionable cybersecurity insights by building an interactive dashboard with **React.js** and **Flask** for real-time monitoring of predictions.

Conversational QA Chatbot for PDF Documents   **Dec 2024 – Present**
Remote   Github Code
- Developed a conversational QA chatbot allowing users to interact with PDF documents through natural language queries, streamlining information extraction from research papers, legal documents, and business reports.
- Built a custom **LSTM-CRF model** for Named Entity Recognition (NER), enhancing the system's ability to accurately identify and classify key entities within document summaries.
- Integrated the NER model into a **Retrieval-Augmented Generation (RAG)** pipeline, utilizing transformer models like **BERT** and **GPT** for efficient speech-to-text transcription and text summarization.
- Implemented efficient document processing and retrieval mechanisms using **PyMuPDF** for PDF parsing and **FAISS** for fast similarity searches, ensuring contextually relevant and rapid responses.
- Conducted extensive training and evaluation using the **CoNLL-2003** and **TEDLIUM datasets**, optimizing chunking strategies and prompt engineering to enhance QA accuracy and system reliability.

Technical Skills

Languages: Python, Java, JavaScript, TypeScript, C++, C#, SQL, HTML, CSS, PHP , R , Linux
Frameworks/Tools: Spring Boot, React.js, AWS Microservices, RESTful APIs, Git, Gitflow, Maven, Postman, Couchbase, Streamlit, Dash, Tableau, Vue, RestAPIs, Kubernetes, Splunk, Jenkins, Kafka
Databases: MySQL, PostgreSQL, MongoDB, NoSQL, Redis
Specializations: Machine Learning, Natural Language Processing (NLP), Large Language Models (LLMs), Software Architecture, Agile/Scrum, CI/CD Pipelines, MLOps, DevOps, Microservices, Secure Coding (OWASP, CWE), Big Data (Hadoop, Spark), API Development and Deployment, Docker, Scala, TensorFlow, GCP,Containerization .