

Madhura Ashok Satao

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EXPERIENCE

Research Assistant

University at Buffalo

February 2024 - Present

New York, USA

- Compiled dataset to classify dialogue utterances into **6** emotion labels for fine tuning **roBERTa** base and large LLMs while working on **Augmentative and Alternative Communication** NLP module
- Trained baseline model for classifying multi class emotion labels and generating emotion aware responses to assist speech impaired users

Software Engineer

HSBC Software Development

September 2020 - June 2022

Pune, India

- Designed schema for **Elasticsearch** indices and **Microservices** to manage multiple user roles and executed access rules to restrict access to data and APIs with **Spring Security, JWT** and **Hibernate**
- Spearheaded research and implementation of UI designs using **Angular** and **AG-Grid** for a data request-managing application with over **5000 users** enhancing overall user experience.
- Achieved **70%** improvement in operation workflow for data requests handling by implementing three-level approval control procedure, in **Angular AuthService** contributing to operational efficiency.
- Implemented an **XML** visualizer and comparator, resulting in **80%** faster and improved data analysis with intuitive custom filtering and threshold calculations. Utilized **Java, Spring Boot, Angular**.
- Automated **GIT** operations, to ensure business-critical configuration files were synchronized across environments facilitating **2 times** faster and concurrent modification by multiple team members with improved accuracy.
- Streamlined deployment operations automating **CI/CD** release pipelines using **Jenkins** and **Ansible**
- Collaborated with stakeholders from HSBC UK office providing effective solutions for client queries, at least 10 per day, for a widely used **business-critical (tier-0)** application to ensure active production support.

EDUCATION

Master of Science,

University at Buffalo

December 2023

New York, USA

Coursework - Data Models and Query Language, Data Intensive Computing, Computer Vision and Image Processing, Information Retrieval, Machine Learning, Project Management.

Bachelor of Engineering,

Pune Institute of Computer Technology

April 2020

Pune, India

Coursework - Data Structures and Algorithms, Object Oriented Programming, Machine Learning Algorithms, Database Management Systems, Data Science and Big Data Analysis.

SKILLS

- **Languages** - Java, Python, SQL, C, Typescript, Javascript, R.
- **Database** - MySQL, PostgreSQL, MongoDB(NoSQL), ElasticSearch.
- **Cloud and Dev** - J2EE, Spring Boot, Angular, React js, Node js, Django, Google Cloud Platform, AWS
- **Machine Learning** - Numpy, Pandas, PyTorch, NLP, Transformers, Sklearn, LLM.

PROJECTS

Chat-Bot for Novels | Python, Apache Solr, React.js, Google Cloud, Flask

- Developed and executed a conversational Q&A chat-bot with a casual communication style.

Breast Cancer Analysis | Python, Flask, Machine Learning, Data Visualization, Data Analysis

- Led development of a predictive portal focused on forecasting mortality of breast cancer patients.

Audio Speech Emotion Recognition | Python, Machine Learning, Django, Librosa

- Developed a lightweight and interpretable ML model to recognize emotions in audio speech from hand-crafted audio signal features.

Mentor Bridge Portal | Java, JDBC, MySQL, Javascript, JQuery, HTML, Bootstrap

- Designed and integrated a robust communication platform facilitating seamless interaction between mentors and students.