

MANDAR CHAUDHARI

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WORK EXPERIENCE

Research Assistant

Sep 2023 – Present

George Mason University College of Science

Fairfax, USA

- Currently engaged in the execution of **JAX** benchmarks on the university's server, focusing on complex datasets as part of the Benchmark Exploration.
- Running Benchmark Exploration using **PyTorch** and Investigating into performance inefficiencies across multiple datasets which are critical facet of the **Benchmark** Exploration.
- Collaborating on the identification and documentation of common schemas for multiple datasets of significant endeavor that forms an integral part of the Benchmark Exploration.

Project Intern

Dec 2022 – Feb 2023

George Mason University - College of Science

Fairfax, USA

- Collaborated closely with **Research Scientists** and the Satellite and Earth System Studies (**SESS**) team at George Mason University's College of Science to develop an interactive website.
- Conducted extensive research on air quality forecasting methodologies and **Algorithms** to enhance the accuracy and reliability of the displayed information.
- Integrated **Data Retrieval** mechanisms to collect and process live air quality data from various sources, ensuring the website's data is up-to-date and comprehensive.
- Developed **Python** scripts to clean, process, and analyze large and live datasets, ensuring **Data Integrity** and enabling accurate insights for the interactive website developed in collaboration with George Mason University's College of Science.

Data Science Intern

Sep 2021 – Dec 2021

ADmyBRAND

Mumbai, India

- Conducted in-depth **Data Analysis** and created heatmaps for multiple categories across 50 countries, providing valuable insights for targeted advertising campaigns at ADmyBRAND.
- Utilized **AWS instances** to efficiently handle and analyze large datasets, ensuring optimal performance and scalability
- Developed robust components using **Python** and **JavaScript** for data restructuring, enabling seamless **Data Processing** and enhancing data quality
- Assisted in the development and deployment of **Machine Learning** models for predictive analytics, contributing to the enhancement of ADmyBRAND's data science capabilities.
- Worked closely with senior **Data Scientists** and mentors to learn advanced statistical techniques and algorithms, applying them to real-world scenarios.

EDUCATION

George Mason University

Aug 2022 – May 2024

Master of Science - Computer Science

Fairfax, VA

- GPA 3.6/4
- Courses: Artificial Intelligence, Machine Learning, Analysis of Algorithms, Database System, Theory and Applications of Data Mining, Deep Learning, Fundamentals of System Programming,

University of Mumbai

Aug 2018 – May 2022

Bachelor of Engineering - Computer Engineering

Mumbai, India

- CGPA 9.5/10
- Courses: Data Structures, Analysis Of Algorithms, Artificial Intelligence, Machine Learning, Networking, Databases, Operating Systems.

PROJECTS

Identity Management System Using Blockchain

Aug 2021 – March 2022

University of Mumbai

Mumbai, India

- Utilized **Metamask** for secure user authentication and seamless interaction with the blockchain network and developed **Solidity** smart contracts to handle user registration, authentication, and document access functionalities in the Identity Management System.
- Implemented **Ganache** to provide preloaded **Ethereum** accounts, enabling users to perform transactions within the system.

- Leveraged **IPFS** for saving documents as hashes, ensuring permanence and availability of data through content-based addressing and distributed storage. Utilized **cryptographic hashes** as addresses in IPFS, enabling efficient access to related objects and ensuring data integrity.

Spelling & Grammar Checker using Natural Language Processing

Aug 2021 – Dec 2021

University of Mumbai

Mumbai, India

- Developed a Spelling Grammar Checker using Natural Language Processing techniques, specifically employing a **Seq2Seq model** based on Keras's encoder-decoder LSTM architecture.
- Preprocessed and tokenized the input text data to prepare it for the Seq2Seq model, ensuring accurate and efficient processing.
- Implemented an encoder-decoder **LSTM architecture** to handle the sequence-to-sequence transformation of input text, allowing for accurate spelling correction.

Object Detection, Recognition, And Distance Tracking For Visually Challenged

Aug 2021 – Nov 2021

University of Mumbai

Mumbai, India

- Develop and implement an advanced object detection and recognition system using the **YOLO model with TensorFlow Lite**.
- Explore and implement state-of-the-art **Computer Vision** algorithms and techniques, such as **image segmentation**, depth estimation, or optical flow analysis, to enhance object detection, recognition, and distance tracking capabilities
- Implement a **Machine Learning** based approach to optimize the voice command system, continuously learning and adapting to improve accuracy and provide more natural and context-aware feedback.
- Conduct thorough performance evaluation and validation of the **Neural Network** and computer vision algorithms, considering metrics such as precision, recall, accuracy, and real-time processing speed, to ensure the system's reliability and effectiveness in aiding navigation.

SKILLS

Languages: Python, JavaScript, PHP, HTML, CSS, C, C++, Solidity, Data Structures & Algorithms

Frameworks: React, Bootstrap

Databases: SQL, MongoDB

Libraries: Pandas, NLTK, Spacy, Numpy, TensorFlow, Keras, Pytorch, Seaborn, Scikit-learn, OpenCV, Matplotlib

Tools: AWS, Google Maps API, Git, Mapbox, phpMyAdmin, Ganache, Metamask

PUBLISHED RESEARCH PAPER

Object Detection, Recognition, And Distance Tracking To Aid In Navigation For Visually Challenged

Dec 2021

International Research Journal of Engineering and Technology (IRJET)

Mumbai, India

Smart E-learning Android Application For Kids Using Machine Learning Algorithms

Dec 2021

International Research Journal of Engineering and Technology (IRJET)

Mumbai, India

Identity Management System Using Blockchain

Nov 2021

International Research Journal of Engineering and Technology (IRJET)

Mumbai, India