Shruti Jha

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EDUCATION

Fr. Conceicao Rodrigues Institute of Technology June 2025
Bachelor of Engineering in Computer Science *Current CGPA: 9.59*

TECHNICAL SKILLS

Languages: C, C++, Python,R Programming, HTML, CSS, JavaScript, MySQL, NoSQL, PHP, React
Tools: Git/GitHub, Unix Shell, VS Code, IntelliJ IDEA, Firebase, phpMyAdmin, PowerBI, Google Colab

INTERNSHIP

Research Assistant | *Research Skills, Python,Pandas, TensorFlow, PyTorch* December 2023-June 2024
- Assisted Prof. Chaitanya V. Mahamuni from University of Mumbai in conducting research on Natural Language Processing (NLP) and Topic Modeling, contributing to data collection, analysis, and manuscript writing.
- Co-authored and published "Topic Modeling for Identifying Emerging Trends on Instagram using LDA and NMF" in IEEE Scopus indexed journal.
- Published "Natural Language Processing: A Literature Survey of Approaches, Applications, Current Trends, and Future Directions" in Science Direct journal.
- Conducted research in Natural Language Processing (NLP) and Topic Modeling, focusing on extracting emerging trends from Instagram data.
- Implemented Latent Dirichlet Allocation (LDA) and Non-Negative Matrix Factorization (NMF) for topic modeling, analyzing social media text data.
- Developed Python-based NLP pipelines, leveraging libraries such as NLTK, spaCy, and Gensim for text processing and analysis.

PROJECTS

ECG Report Analysis Using Generative AI | *Python, Generative AI* January 2025-Present
- Developing a tool to analyze and understand ECG reports and generate stage-wise results based on it
- Making use of generative AI to provide customized results for different individuals based on their reports.
- Using the VGG model for image identification involves leveraging a pretrained VGG network Using the VGG model for image identification involves leveraging a pretrained VGG network VGG16 for feature extraction and classification using TensorFLow.

FoodMO | *React, Google cloud API, Google lens API, Python* September 2023-May 2024
- Developed a nutrient analysis application using Optical Character Recognition(OCR)
- Used OCR to extract text from image and return analysis of food item whether it is safe for consumption and recommend healthier alternatives

Medical Insurance Premium Prediction with Machine Learning | *ML, ANN, Keras, Tensorflow* February 2024
- Performed data cleaning, feature engineering and visualization
- Built, trained and tested an artificial neural network model in Keras and Tensorflow
- Predicted the health insurance cost incurred by Individuals based on multiple factors using ML and ANN

Reviews Sentiment Analysis Using NLP | *Python, Machine Learning, NLP* January 2024
- Cleaned and pre-processed dataset of Amazon Echo Reviews for extracting information and visualized the data using matplotlib package
- Implemented python programming for Natural Language Processing
- Created a pipeline to remove stop-words, perform tokenization and padding
- Trained and tested Naive Bayes Classifier Models

English/French Translator using Long Short Term Memory Networks | *ML, AI, LSTM*   February 2024
- Cleaned, pre-processed data and visualized using graphs and word clouds.
- Built, trained RNN, LSTM based model and assesed its performance to translate sentence from English to French

Generating New Recipies using GPT-2 | *Python, ML, NLP, GPT-2, HuggingFace*   January 2024
- Cleaned and pre-processed text data comprising recipes for modelling, and split it into a training and validation set
- Used HuggingFace library to fine-tune a deep, generative model, and specifically trained such a model on Google Colab
- Created a pipeline to remove stop-words, perform tokenization and padding
- Fine-tuned a large-scale model like GPT-2 to effectively create realistic and unique recipes from lists of ingredients based on the dataset

Data Analysis Using Pyspark | *Python, Google Colab, pySpark SQL*   December 2023
- Applied different queries to the dataset to extract useful Information
- Visualize the extracted information using matplotlib package

Web Scraping | *Python, Pycharm, Microsoft Excel*   March 2023
- Scraped the IMDb website into an excel file to provide an easy approach to access and read data

Monty Hall Simulation | *HTML, CSS, JavaScript, PHP*   February 2023
- Created a Monty Hall Problem Simulation
- Used to obtain statistical information from classmates and analyze patterns in selection and probability of choosing the correct answer

PUBLICATIONS

- *"FoodMO: A Food Nutrient Analysis Application Using Optical Character Recognition and Machine Learning"*,ICT Systems and Sustainability. ICT4SD 2024. Lecture Notes in Networks and Systems, vol 1159. Springer, Singapore. DOI:10.1007/978-981-97-8526-1_47

- *"Natural Language Processing: A Literature Survey of Approaches, Applications, Current Trends, and Future Directions"*,2024 Asian Conference on Intelligent Technologies (ACOIT), KOLAR, India, 2024, pp. 1-12 DOI:10.1109/ACOIT62457.2024.10941573

- *"Blockchain-Based Smart Contracts for Decentralized Vehicle-to-Grid (V2G) Load Management"*, 2024 4th International Conference on Ubiquitous Computing and Intelligent Information Systems (ICUIS), Gobichettipalayam, India, 2024, pp. 1516-1525. DOI:10.1109/ICUIS64676.2024.10866137.

- *"Topic Modeling for Identifying Emerging Trends on Instagram Using Latent Dirichlet Allocation and Non-Negative Matrix Factorization"*,2024 10th International Conference on Advanced Computing and Communication Systems (ICACCS), Coimbatore, India, 2024, pp. 1103-1110. DOI: 10.1109/ICACCS60874.2024.10717021

- *"Emerging Applications and Challenges in Quantum Computing: A Literature Survey"*,2024 International Conference on Artificial Intelligence, Big Data, Computing and Data Communication Systems (icABCD), Port Louis, Mauritius, 2024, pp. 1-12 DOI: 10.1109/icABCD62167.2024.10645271

EXPERIENCE

GDSC Club | *Creative Head*   September 2023 – July 2024
Maintained and organized event flyers, posters, digital content, certificates and led a team of two students to create content for the Google events.

NSS Club | *Volunteer*   August 2022 – July 2024
University club under ministry of sports and youth affairs centered around social work

Debate Club | *Member*   August 2022 – Present
Organized and participated in inter-department debates on various topics