

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 | *University of Mumbai – NLP, Python, TensorFlow, PyTorch, Pandas* Dec 2023 – June 2024

- Collaborated with Prof. Chaitanya V. Mahamuni on a 6-month NLP research project involving large-scale Instagram data, supporting data collection, model development, and publication efforts.
- Co-authored and published 2 research papers, including one in an IEEE Scopus-indexed journal (LDA/NMF-based topic modeling) and another in Elsevier's ScienceDirect (NLP survey).
- Processed and analyzed 100K+ Instagram posts to identify trending topics using LDA and NMF, increasing topic coherence scores by 18% through preprocessing and hyperparameter tuning.
- Built reusable NLP pipelines in Python (NLTK, spaCy, Gensim), reducing preprocessing time by 35% and enabling scalable experimentation with multiple topic modeling techniques.
- Benchmarked LDA vs. NMF models across 5 datasets, improving topic classification accuracy by 22% using optimized vectorization and token filtering.
- Supported experimental design, literature review, and visualization components that contributed to a 100% paper acceptance rate at 3 international conferences.

PROJECTS

ECG Report Analysis Using Generative AI | *Python, TensorFlow, VGG16* Jan 2025 – Present

- Engineered a deep learning model using VGG16 to identify ECG stages with 87% accuracy.
- Incorporated generative AI for personalized ECG result summaries.
- Implemented a UI to present predictions and health insights interactively.

FoodMO – Nutrient Analyzer App | *React, Google Cloud, Python* Sep 2023 – May 2024

- Developed a React app using OCR to extract food label data for nutrient evaluation.
- Optimized backend to generate dietary suggestions based on ingredient composition.

Health Insurance Premium Prediction | *ML, ANN, Keras* Feb 2024

- Built a neural network to estimate premiums with a Mean Absolute Error of 3.9.
- Refined model through correlation-based feature selection and hyperparameter tuning.

Sentiment Analysis – Amazon Reviews | *Python, NLP* Jan 2024

- Constructed an NLP pipeline and trained a Naive Bayes classifier with 82% accuracy.
- Visualized sentiment trends to interpret consumer perception across 3,000+ reviews.

English–French Translator (LSTM) | *RNN, LSTM, NLP* Feb 2024

- Trained a sequence-to-sequence model on 10K+ sentence pairs for language translation.
- Assessed output quality using BLEU score and visual analytics.

AI Recipe Generator with GPT-2 | *HuggingFace, NLP* Jan 2024

- Fine-tuned GPT-2 to produce recipe instructions from custom ingredient lists.
- Streamlined data prep and tokenization, resulting in faster model convergence.

Big Data Analysis with PySpark <i>PySpark, SQL</i>	Dec 2023
<ul style="list-style-type: none"> Queried and filtered large datasets using PySpark SQL to derive business insights. Graphed patterns using matplotlib to highlight trends and correlations. 	
IMDb Web Scraper <i>Python, Excel</i>	Mar 2023
<ul style="list-style-type: none"> Extracted movie metadata using BeautifulSoup and exported structured outputs to Excel. 	
Monty Hall Simulation <i>HTML, JS, PHP</i>	Feb 2023
<ul style="list-style-type: none"> Simulated the Monty Hall probability puzzle and analyzed results from 200+ participants. 	

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

Google Developer Student Club (GDSC) <i>Creative Head</i>	Sep 2023 – July 2024
<ul style="list-style-type: none"> Led a team of 2 to design digital content for 15+ technical events. Enhanced event branding and participation through streamlined promotion on 7 social media handles. Coordinated with organizers to ensure visual consistency. 	
National Service Scheme (NSS) <i>Volunteer</i>	Aug 2022 – July 2024
<ul style="list-style-type: none"> Contributed to 22+ social initiatives including health drives and clean-ups. Managed outreach efforts to increase volunteer engagement. 	
Debate Club <i>Member</i>	Aug 2022 – Present
<ul style="list-style-type: none"> Participated in 6+ inter-departmental debates on tech and policy topics. Won the first prize in an AI ethics competition (2024). 	