Shivam Tawari

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EDUCATION

G H Raisoni College of Engineering **July 2019 – June 2023**
Bachelor of Technology in Artificial Intelligence *Nagpur, India*

- CGPA: 8.82/10

RELEVANT COURSEWORK

- Data Structures
- Algorithms Analysis
- Systems Programming
- Artificial Intelligence
- Software Methodology
- Database Management
- Computer Architecture
- Machine Learning

RESEARCH AND WORK EXPERIENCE

Indian School of Business (ISB) **April 2024 – Present**
Research Associate *Hyderabad, India*

- Analyzed and processed large datasets exceeding 50 GB from sources such as Factiva and Nielsen, leveraging advanced Natural Language Processing (NLP) techniques to extract meaningful insights and enhance data utility.
- Implemented Fuzzy Matching algorithms that achieved a 95% accuracy rate in identifying and reconciling discrepancies across millions of data points, ensuring high consistency and reliability.
- Utilized HuggingFace's API for entity recognition, improving the precision of extracted information by 20% compared to previous methods.
- Deployed Meta AI's LLaMA 3 70B model for data standardization, increasing overall data quality by 30%, ensuring cleaner, more reliable datasets for downstream analysis.
- Evaluated and refined prompt engineering strategies for Google's Gemini 2.0 Flash to model career progression, focusing on addressing ambiguity and linguistic variations in job titles.

Capgemini **November 2023 – June 2024**
Analyst *Bengaluru, India*

- Designed a system streamlined on dataset leveraging deep learning for detecting smoke and fire in football stadium.
- Utilized a state-of-the-art YOLO V8, customized for the purpose of detecting smoke of flares, achieving a validation accuracy of 81%.
- Deployed the model on Django web application using Microsoft Azure Cloud.

Center of Excellence in AI and ML - GHRCE **June 2022 – September 2022**
Research Intern *Nagpur, India*

- Evaluated linear and non-linear Machine Learning algorithms for Time Series Forecasting trained on 2500 data points.
- Transformed data to stationary by Time Differencing features to remove Trend and Seasonality.
- Concluded that key factor was transformation of features adding technical indicators and 1-,2- and 3- day lags, which made project viable.
- Recommended a robust and efficient pipeline for predication.

RESEARCH PUBLICATION

- **Fusing information from multiple sources for Multimodal Emotion Recognition** (In Progress)
- **Countering Dis-information by Multimodal Entailment via Joint Embedding** presented at the 2023 International Conference on Intelligent and Innovative Technologies in Computing, Electrical and Electronics (IITCEE) [doi: 10.1109/IITCEE57236.2023.10090876]
- **Robust Time Series Forecasting via Time Differencing and Stacking** presented at the 2022 International Conference on Smart Generation Computing, Communication and Networking (SMART GENCON) [doi: 10.1109/SMARTGENCON56628.2022.10083651]

PROJECTS

Interpreter.ai | *Python, TensorFlow, Django, PyAudio, Google Text to Speech (gTTS)* **August 2022**

- Interpreter.ai is a deep learning-based real-time translation web app for regional languages which supports 204 languages along with features such as Group Conversation, Image Translation, and Mute sign language translator.
- Trained on FLORES-200 Multilingual Machine Translation dataset with a 91.4% validation accuracy.

HateRaid | *Python, Pytorch, Flask, Microsoft Azure* **January 2022**

- Hateraid helps in identifying hate in the form of memes on social media and other hateful content with a validation accuracy of 92.6%.
- Used an Early Fusion based supervised Multimodal Bi-transformer model (MMBT) which is trained on the Meta Hateful Memes Dataset with about 10k multimodal examples.

CovidWizard | *Python, Flask, Plotly, scikit-learn* **July 2021**

- Developed a web application solution based on AI for governments and policy makers to monitor and track real-time policy implications all over the world, and predict Covid hotspots.
- Used open source API's to fetch Covid related News.

TradL | *Python, Flask, scikit-learn* **June 2021**

- Created a website to predict the price of Stocks, commodities and crypto currencies.
- Fetched the data from Zerodha using API's, forecasted the prices using stacked model of ElasticNet, SGDRegressor and Support Vector Machine with meta model SVM RBF kernel, achieved a 2% mean absolute error in price forecasts.

HONORS AND AWARDS

Smart India Hackathon, 2022

- Winner, Developed a web application, interpreter.ai, for real-time translation of 28 Indian regional languages and 176 international languages.
- Leveraged transfer learning by fine-tuning state of the art NLLB to increase accuracy by 10% compared to Google translator's accuracy of 85%.

Accenture Applied Intelligence Hackathon, 2021

- Winner, Real-time online platform, CovidWizard, with the help of AI to cultivate data from various sources and provide relevant information.
- The information can be sliced and diced as per the user's requirement's to help society fight against COVID-19.

AI for Healthcare Hackathon, 2021

- Second Runner Up, Created an AI powered website, XRayd, where the user can upload an X-ray/CT scan image to get predictions from 21 diseases using a Deep learning based model.
- Prioritizes AI explainability, Class Activation Map method clarifies the prediction with the help of a heatmap superimposed on the image.

SKILLS AND ACTIVITIES

Languages: Professional working proficiency in English; Fluent in Hindi
Technologies/Frameworks: Hugging Face, GenAI, Large Language Models (LLM's), Pandas, Numpy, Scikit-learn, Matplotlib, Plotly, Flask, Django, GitHub, WordPress
Developer Tools: VS Code, PyCharm, Google Cloud Platform, Microsoft Azure Services, AWS EC2, Google Suite
Certifications: Udacity AI Nanodegree, Udacity Deep learning Nanodegree, Coursera Google Data Analytics
Activities: IEEE Member, Volunteer of E-Cell GHRCE