SOWMEN MITRA

Email | ResearchGate | mitra-nlp.com

EDUCATION

Hebei University of Technology, Beijing, China
- BEng in Computer Science and Technology
- GPA: 3.54/4 (top 3-5%)
- **WES US evaluation score 3.64**
- I excelled in several key courses that are foundational for machine learning, including Linear Algebra, Probability Theory and Mathematical Statistics, Data Structures, Design and Analysis of Algorithms, Data Mining and Data Warehousing Technology, Artificial Intelligence, Discrete Mathematics, Python, and Comprehensive Programming Experiment.

TEST SCORE

Graduate Record Examination (GRE)
- Quant: | Verbal: | AWA:

International English Language Testing System (IELTS)
- Overall: | Listening: | Speaking: | Writing: | Reading:

UNDERGRADUATE THESIS

Thesis Title: Detecting Public Hate Sentiment: A Deep Learning-Based Approach.
Thesis supervisor: Dr. Xiaoke Hao(haoxiaoke@hebut.edu.cn)

For my thesis project I developed a state-of-the-art system to identify and classify hate sentiment from social media text data. The project leveraged advanced transformer models, including BERT and DistilBERT, to enhance the accuracy and precision of sentiment detection. I applied extensive preprocessing techniques, such as tokenization and data augmentation, and conducted experiments using PyTorch to fine-tune the model's performance.

RESEARCH EXPERIENCES

Research Interests
- My research interests lie in the fields of deep learning, natural language processing (NLP), and computer vision, with a focus on developing AI models for real-world applications.

Selected Publications
- P. Das, **S. Mitra**, S. Chakraborty, M. H. K. Mehedi, M. Y. M. Adib and A. A. Rasel, **"CNN-GRU Based Fusion Architecture For Bengali License Plate Recognition With Explainable AI,"** 2023 14th International Conference on Computing Communication and Networking Technologies (ICCCNT), Delhi, India, 2023, pp. 1-6 [paper]
- **S. Mitra** and P. Kanungoe, **"Detecting Public Hate Sentiment Using Transformers,"** *2023 14th International Conference on Computing Communication and Networking Technologies (ICCCNT)*, Delhi, India, 2023, pp. 1-4 [paper]
- S. Chakraborty, M. B. Uddin Talukdar, M. Yaseen Morshed Adib, **S. Mitra** and M. G. Rabiul Alam, **"LSTM-ANN Based Price Hike Sentiment Analysis from Bangla Social Media Comments,"** *2022 25th International Conference on Computer and Information Technology (ICCIT)*, Cox's Bazar, Bangladesh, 2022, pp. 733-738 [paper]
- **S. Mitra** and P. Kanungoe, **"Smartphone based Human Activity Recognition using CNNs and Autoencoder Features,"** *2023 7th International Conference on Trends in Electronics and Informatics (ICOEI)*, Tirunelveli, India, 2023, pp. 811-819 [paper]

SELECTED PROJECTS

- Machine Learning Project: Transportation Metrics Prediction[github]
- End-to-End NLP Project | Build a Chatbot in Dialogflow

VOLUNTEER EXPERIENCES

Teaching Assistant (TA) for Programming Courses   *Oct. 2020-Jan. 2022*
- Guided students during practical sessions, helping them debug code and understand programming concepts.

Member of University Coding Club   *Oct. 2020-Sep. 2021*
- Led weekly coding practice sessions focused on algorithmic challenges and problem-solving.

TECHNICAL SKILLS

- **Programming Languages:** Python, Java, JS, C++
- **Tools:** NumPy, Pandas, TensorFlow, SK Learn, SciPy, PyTorch, Keras, OpenCV, Git, Latex
- **Statistical Skills**: Probability Theory, Linear Algebra, Statistical Modeling, Data Mining, Sentiment Analysis, Data Preprocessing, Machine Learning Algorithms (CNN, GRU, LSTM, BERT, Autoencoders), Explainable AI (XAI)