Debaleena Chakraborty

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Education

Arizona State University **August 2024 - May 2026**
Masters in Computer Engineering *4.00/4.00 GPA*

Indian Institute Of Information Technology Guwahati **August 2019 - May 2023**
Bachelor of Technology in Electronics and Communication Engineering *8.66 /10 GPA*

Technical Skills

Languages And Tools: Python, MATLAB, C++, SQL, GitHub, MS Excel
Technologies/Frameworks/Libraries: Tensorflow, PyTorch, Numpy, Pandas, Matplotlib, Seaborn, Scikit-learn, PySpark
Certifications: Data Structures and Algorithms - Python, MATLAB , Google Research Week

Experience

ZS Associates **September 2023 - June 2024**
Data Engineer

- Created procedural flows with SQL queries and used Microsoft Excel to generate insights on sales data of medical representatives.
- Leveraged customized data analytics to determine incentive compensation for over 1000 medical reps.
- Designed parallel Excel workbooks for Quality Checks at various project stages, ensuring 100% methodology validation throughout the process, contributing to a 25% reduction in error rates in the SQL database.

IISc Bangalore **May 2022 - July 2022**
Summer Research Fellow

- Carried out a detailed study on various time frequency analyses of Electroencephalogram (EEG) signals.
- Studied the Matching Pursuit algorithm to understand its application in EEG data analysis and its benefits.

Projects

Analysis of Seizure types based on Deep Learning | *Python, Tensorflow* **January 2023 - May 2023**

- Classified different types of seizures using Signal Processing and various Deep Learning models.
- Transformed EEG signal segments into phase synchronisation matrices in Python, and deployed a Convolution neural network to predict three different types of seizure with an accuracy of over 83%.
- Utilized both time domain and spectral domain EEG data as input to an LSTM model to classify data into six different types of seizure with a remarkable F1-score and accuracy of 97.7% and 98% respectively.

FoodVision | *Python, PyTorch, Hugging Face* **September 2024**

- Developed and deployed a food vision model on Hugging Face using EfficientNet-B2 feature extractor, capable of predicting over 100 food classes achieving 95 % accuracy.
- Conducted trade-off analysis between EfficientNet-B2 and ViT extractors, selecting EfficientNet-B2 based on model size, accuracy, and prediction time thus optimizing for real time application performance.

Publications

- A. Shankar, D. Chakraborty, M. J. Saikia, S. Dandapat and S. Barma, "**Seizure Type Detection Using EEG Signals Based on Phase Synchronization and Deep Learning**," 2023 IEEE 19th International Conference on Body Sensor Networks (BSN), Boston, MA, USA.
- A. Shankar, D. Chakraborty, S. Dandapat, S. Barma and M. J. Saikia, "**Attention-based Deep Learning for Epileptic Seizure Type Detection**," 2024 International Conference on Advancements in Smart, Secure and Intelligent Computing (ASSIC), Bhubaneswar, India.
- A. Shankar, D. Chakraborty, S. Dandapat and S. Barma, "**Long Short-Term Memory Framework for Classification of Seizure Types Using A Different Format of EEG Signal**," 2023 IEEE Signal Processing in Medicine and Biology Symposium (SPMB), Philadelphia, PA, USA.