Anish Nethi

✉ anishnethi@utexas.edu 💼 Anish Nethi 🌐 Portfolio 📞 +1 (737) 243-2072

EDUCATION

University of Texas at Austin *Aug 2024 - Present*
Master of Science in Computer Science

Mahindra University, École Centrale School of Engineering *Oct 2020 - Jun 2024*
Bachelor of Technology in Computer Science and Engineering CGPA: 8.84, Rank: 5/214

EXPERIENCE

The University of Texas at Austin *Aug 2024 - Present*
Teaching Assistant Austin, Texas
- Held office hours to help students grasp the core concepts of Discrete Mathematics, offering tailored support to improve their understanding and confidence in the subject.

Indian Institute of Technology, Guwahati *Jul 2023 - Jul 2024*
Research Assistant Remote
- Focused on improving the precision of eye tracking in VR setups through work in differentiating saccades and fixations to generate accurate and natural scanpaths in the space-time domain.

Damage in Materials and Structures Lab, Arizona State University, USA *May 2023 - Jun 2024*
Research Intern Remote
- Researched and implemented deep learning and machine learning techniques to enhance the accuracy of road marking classification by integrating textural elements, with a maximum accuracy improvement of up to 20%.

AlgoFnO *Dec 2022 - Mar 2023*
Machine Learning Intern Hyderabad, India
- Used the TSFresh library for feature engineering by sliding window technique on Time-Series data reducing the overall size of the dataset from (1236760 x 7) to (41281 x 18) using PCA and t-SNE while keeping the margin of error around 2%.

Mahindra University *Oct 2022 - Oct 2023*
Research Assistant Hyderabad, India
- Preprocessed and featurized time-series data converting it to a regression problem to predict volcano eruption time using Gradient Boosting Regressor, Random Forest Regressor, and RANSAC Regressor, resulting in accuracy improvement from 58% to 84%.

National University of Singapore *Jun 2022 - Jul 2022*
Academic Intern Singapore, Singapore
- Led end-to-end BMI Classification project using CNNs like VGG16 and Xception, by using DuckDuckGo and Yahoo APIs for data gathering and methods like data augmentation, instance segmentation, and denoising for preprocessing.

PUBLICATIONS

BMI Prediction for Full Body Images using PoseNet Embeddings
International Conference on Emerging Techniques in Computational Intelligence, 2023

Detecting DeepFakes: A Deep Convolutional Neural Network Approach with Depth Wise Separable Convolutions
International Conference on Emerging Techniques in Computational Intelligence, 2023

Multiplicative Gaussian Noise Removal using Partial Differential Equations and Activation Functions: A Robust and Stable Approach
International Conference on Algorithms, Computing and Systems, 2023

Cohesive Group Emotion Recognition Using Deep Learning
International Winter Conference on Software Engineering, Artificial Intelligence, Networking and Parallel/Distributed Computing, 2023

PROJECTS

Predicting Naturalistic Eye Scanpaths from Saliency Maps: Spatial and Temporal Modeling of Eye Movement Behavior *Jul 2023 - Jul 2024*
Indian Institute of Technology, Guwahati - Prof. Debanga Neog
A solution for predicting the natural path an eye would trace when viewing a scene, simulating how a person's gaze would move across an image.
Role:
- Gathered and preprocessed scanpath data to generate a high-frequency (90 Hz) dataset capturing the subtle dynamics of saccades and fixations.
- Developed and trained mathematical models to generate realistic scanpath sequences by calculating distances from the initial coordinate, incorporating distinct considerations for fixation durations, saccadic speeds, and transitions between coordinates.

Cohesive Group Emotion Recognition *Jan 2023 - Jun 2023*
Mahindra University, Hyderabad - Prof. Sanatan Sukhija
A DL solution for predicting the combined emotion of a group based on individual emotional features.
Role:
- Employed pre-trained models such as YoloV3 for face detection and extraction, and DeepFace for emotion recognition on individual faces, combined individual emotions through majority vote and average emotion aggregation.
- Evaluated performance using Correlation, Cross-Entropy, and Top-n accuracy, achieving a final top-2 accuracy of 90.32%.

BMI Prediction for Full Body Images using PoseNet Embeddings *Jun 2022 - Jul 2022*
National University of Singapore, Singapore
A solution that uses ML Algorithms and DL architectures to predict the class of Body Mass Index of a person solely based on full-body images.
Role:
- Scraped full-body images using DuckDuckGo scraper, BeautifulSoup, and Yahoo's API and implemented quantization, segmentation, and custom Deep Learning models for data preprocessing and pre-trained PoseNet model for feature extraction.
- Trained Lasso LARS, Transformed Target Regressor, and ElasticNet CV, and conducted a model comparison of 40 models based on Adjusted R-squared, RMSE, and run-time.

TECHNICAL SKILLS

Languages: Python, C/C++, MATLAB, HTML, CSS.

Tools & Frameworks: Jupyter, Visual Studio, Tensorflow, MySQL, OpenCV, Latex & Scikit-Learn.