Eswar Adapa

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GitHub | Linkedin

Skills

Programming Languages	Python, Matlab, C, C++, Embedded C
Frameworks	PyTorch, TensorFlow, Keras, XGBoost, Scikit-learn, NLTK
Coursework	DSA, OOP's, Machine Learning, Cryptography, Pattern Recognition

Experience

Research Intern | Deep Learning, Signal Processing, Python **May - Aug 2023**
DRDO

- Enhanced preprocessing and symbolized sEMG data, resulting in a notable 35% enhancement in data quality.
- Applied Deep Learning techniques to IMU data from walking to distinguish 7 separate gait phases, attaining an outstanding accuracy of 92%.
- Employed sTE (symbolic transfer entropy) to probe muscle interactions during distinct gait phases, unveiling a clear link between walking speed and a 30% rise in information transfer among muscles.

Publications

Fatigue Classification and Onset Estimation using sEMG Signals During Strength Training **Aug 2022 - Apr 2023**
APSIPA23-IEEE

- Led research into Fatigue Classification and Onset Estimation through sEMG during Strength Training, leveraging a cutting-edge dataset exceeding 1000 samples. This effort led to the approval of result findings at the Taiwan ASPIPA-2023 international conference.
- Conducted thorough classification analysis across diverse measurement scenarios, resulting in an 86% accuracy in classification.
- Introduced a pioneering model employing Machine Learning and Majority Windowing methods for the automated detection and estimation of Muscle Fatigue onset, yielding a 12% error in onset estimation.

Projects

DL-Based Fake News Classifier with LSTM **May – July 2023**

- Spearheaded an unmatched sentiment analysis technique rooted in deep learning, utilizing word embeddings and LSTM, leading to a remarkable surge in accuracy that outperformed established benchmarks.
- Achieved a praiseworthy 90% accuracy through steadfast implementation.
  GitHub: github.com/Eswar-09/DL-Based Fake News Classifier with LSTM

Footstep Audio Classification: Analyzing Human Gait Sounds **Mar – Apr 2023**

- Devised and executed a notably effective FNN to distinguish individuals and associated phases via human foot audio signals, underscoring its substantial influence on classification efficacy.
- Attained an impressive 96% accuracy with the FNN model.
  GitHub: github.com/Eswar-09/footstep-audio-classification

sEMG-based Hand Movement Classification **Oct - Dec 2022**

- Launched a precise ML and NN-driven algorithm for classifying hand movements, exceeding prior approaches influenced by impactful EMG-based research literature. Delivered substantial performance enhancement.
- Supervised detailed analyses on a per-subject basis and overall, leading to a significant accuracy rise from 88% to 91%.
  GitHub: github.com/Eswar-09/sEMG-based Hand Movement Classification

Education

Indian Institute of Information Technology, Sricity **Dec 2020 - Present**
B.Tech.(Honors), Electronics and Communication Engineering

- CGPA: 8.02/10

Achievements

Academic Grand Challenge on Climate Change, Nasscom and Telangana Government **Feb 2023**

- Devised an accurate predictive framework for heatwave events and Air Quality Index in Tier-2 cities of Telangana, showcasing notable performance enhancement compared to prevailing models.
- Received acknowledgment as part of the top 40+ teams out of a pool of over 7000+ participants in the competition.

Position of Responsibility

Secretary – IEEE, IIIT Sricity **March 2023 - Present**

- Orchestrated travel plans and lodging for over 100 attendees at the esteemed ESDC Conference, guaranteeing streamlined and accurate arrangements.
- Oversaw all logistical elements, contributing to an unforgettable conference rated at 4.5/5 by participants.