Ashish Vashist

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Education

Bharati Vidyapeeth College Of Engineering   Pune, India
Bachelor of Engineering in Computer Science   Nov 2020 - June 2024
CGPA: 9.5
Courses: Deep Learning, Machine Learning, NLP, Operating Systems, Data Structures and Algorithms, Statistics, Networking, DBMS, Data Visualization, Pattern Recognition

Experience

Deep Forest Sciences - Machine Learning Intern   June 2023 – August 2023
Worked in the DeepChem Open-source library, improving their PyTorch framework and porting the TextCNN model from TensorFlow to PyTorch.

Carnegie Mellon University - Research Assistant   May 2023- Ongoing
Contributions to Computational Biology Lab including Visual Prompt Tuning and image reconstruction for Cryo-ET 3D Images. Contributed in CMU 02620 course (Machine Learning for Scientists) in prepaaring question sets on Gaussian Graphical Model (GGM)

National University Of Singapore - Research Assistant   Jan 2022–July 2023
Worked on Geo Spatial Temporal Analysis on Facebook Human Movement Data and Graph ML Approaches.

Contrails AI - Machine Learning Intern   May 2024–June 2024
Analyzed various deepfake techniques utilizing Logical Access (LA) and Text-to-Speech (TTS) methods, and developed a robust testing pipeline to detect audio spoofing in video segments, ensuring the integrity and authenticity of multimedia content.

Birla Institute Of Technology and Sciences - Research Intern   Aug 2022–April 2023
Worked on Fall Detection Project using Sis Fall and Uma Fall datasets. Used LSTM and sequence based model for fall prediction on two datasets and comparision on various benchmarks. Worked on Electric Charging Station Optimization project.

Indian Institute Of Information Technology - Intern   Feb 2022–Nov 2022
Worked on IIITA Alumni Dataset and extracting profiles from Linkedin. Developed a GUI based application for database using ElectronJS and MongoDB

Skills Summary

Languages: Python, Java, SQL, HTML, Dart
Software & Tools: Power BI, Tableau, GIT, Matlab, Docker, Postman
Frameworks/Libraries: Sklearn, TensorFlow, Keras, PyTorch, OpenCV, FastAPI, Flask, Langchain(elementary)

Projects

Sanskriti-Indic LLM: Co-leading a team of 80+ collaborators in the curation and development of datasets for over 20 local Indian languages, aimed at enhancing Indic LLM Benchmarking. Collaborated with Hugging Face to ensure high-quality data collection, annotation, and validation processes, contributing to the advancement of natural language processing capabilities for regional languages.

Predicting Invasive Ductal Carcinoma Using Deep Learning: Trained various DNNs and CNNs for automated detection of invasive ductal carcinoma using whole-slide images of

breast cancer tissues. Trained initial model on ResNet 18, VGG16, AlexNet, ResNet 101 and other vision models Compared the results of different models and VIT Vision Transformer for detecting carcinoma

Neuro-Fuzzy Decoding: Harnessing BiLSTM Networks for Predictive Limb Motion Analysis in EEG Studies: Applied Fuzzy Logic with Attention-based BiLSTM, LSTM, and machine learning models to predict hand motor actions using EEG data. Developed a framework leveraging temporal dynamics and fuzzy logic to improve accuracy and interpretability of EEG signal classification, enhancing applications in prosthetic control and rehabilitation for neurological impairments.

Workout Repetition Tracker: Developed a software using OpenCV to accurately count repetitions and track limb positions for athletes and workout routines. Implemented advanced computer vision models, including PoseNet, to enhance performance analysis, ensuring precise tracking and feedback for improved training efficiency. The software supports real-time monitoring and provides analytics to assist athletes in optimizing their workouts.

Speech Emotion Recognition: Emotion recognition analysis of real time speech data using LSTM and various CNN models , Pydub and Librosa

Achievements

- Selected for IIT Roorkee SPARK Internship Program (2022) out of 14000+ students.
- Top performer in Smart India Internal Hackathon - May 2022.

Certifications

- Machine Learning - Stanford university - Coursera
- Deep Learning specialization - Deeplearning.ai - Coursera
- CNN for Visual Recognition – Stanford CS231n
- Graph Machine Learning - Stanford CS224w
- Optimization Algorithms - NPTEL - IITD

Extra-Curricular Activities

- Founder – Founded a Non - profitable Deep Learning research Community with an objective of democratizing AI and reducing barriers for passionate researchers who do not have a group or the means to conduct independent research. Started a Slack Community of 450+ members and working in research projects from independent researchers associated with CMU, MIT, Microsoft, Columbia, IIIT Delhi, IIT, Boston University and many other organizations

- Tech Team Member/Lead – GFG, GDSC, SkillShip Foundation, Coding Ninjas