Pittsburgh, PA
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Abhishek Verma

abhishekverma1997
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Website (Portfolio)

Education

Masters in Information Sciences University of Pittsburgh GPA: 4.00/4.00 **Jan 2021 — Jan 2023**

Bachelors of Technology, ECE VIT University GPA: 8.95/10.00 **Jul 2016 — May 2020**

Experience

Machine Learning Intern **Jul 2021 — Present**

UPMC Hillman Cancer Research Center (MoSHI) Pittsburgh, PA

- Developed predictive machine learning models to predict remission in patients going through cancer treatment based on activities of daily living (ADLs).
- Worked on AWARE mobile passive sensing framework to gather patient's daily life activity data and digital bio-markers. Used RAPIDs data pipelines to stream mobile and wearable device data to extract behavioral features for analysis and training predictive models.

Research Data Analyst **Mar 2021 — July 2021**

University of Pittsburgh (Biomedical Informatics Lab) Pittsburgh, PA

- Worked on real time data-sets with 1 million+ patient records that included data on patient visits, patient diagnosis, medication and course of treatment.
- Developed reports, data analysis and visualizations. Managing and designing the reporting environment. Providing technical expertise in data storage structures, data mining, and data cleansing.

Undergraduate Researcher **Jul 2018 — Apr 2020**

VIT University Chennai, India

- Worked on Deep Learning with emphasis on developing new hidden layer architecture and algorithms for facial emotion recognition in Convolutional Neural Network (CNN).
- Implemented Convolutional Neural Network (CNN) for Speech Recognition System using Mel-frequency cepstral coefficients (MFCC).

Projects

Disease Detection in Coconut Plantation Using Transfer Learning

- Used transfer learning technique along with Convolutional Neural Networks (CNN) to detect early symptoms of Basal Stem Rot (BST) in Coconut Plantations of Southern Indian States affecting over a million farmers.
- Used Flask web framework to develop an Web App. that instantly classifies the diseases and provides an array of remedies to farmers at their fingertips.

Score Predictor for IPL (Cricket League) **Web-App**

- Score prediction System for Indian Premier League (IPL - Cricket tournament) using last 10 years of ball by ball dataset.
- The regression model works on 50+ features including stadium track record, past performances of teams against each other etc. Pragmatic RMSE value was achieved. The web application was deployed on Heroku cloud server using Python Flask framework.

Holiday Alert System using Airflow Pipelines

- Developed an ETL pipeline that extracts official public holidays from around the world using Calendarific API, Loaded the transformed data in to a MongoDB Atlas Cloud server.
- Automated the ETL pipeline using Apache Airflow Orchestration for holiday email alerts with relevant articles on the observance.

Technical Skills

Programming Language	Python, Java, R, C, C++, Matlab, Shell Script, VHDL | **Databases** SQL, MongoDB, PostgreSQL
Machine & Deep Learning	TensorFlow, Keras, OpenCV, PyTorch, Pandas | **Visualization** Tableau, Matplotlib, Seaborn
Cloud Platforms	AWS SageMaker, Heroku, Google Cloud Platform (GCP) | **Web-Framework** Flask
ETL Pipelines	Apache Airflow, TensorFlow Extended, RAPIDs

Research Publications

- **Abhishek Verma**, Piyush Singh, John Sahaya Rani Alex. Modified Convolutional Neural Network Architecture Analysis For Facial Emotion Recognition. *In International Conference on Systems, Signals and Image Processing (IWSSIP), Osijek, Croatia.* IEEE, 2019. **DOI: 10.1109/IWSSIP.2019.8787215**
- Md Amaan Haque, **Abhishek Verma**, John Sahaya Rani Alex, Nithya Venkatesh. Experimental Evaluation of CNN Architecture for Speech Recognition . *In International Conference on Sustainable Technologies for Computational Intelligence (ICTSCI), Jaipur, India.* Springer, 2019. **DOI: 10.1007/978-981-15-0029-9**
- **Abhishek Verma**, Piyush Singh, John Sahaya Rani Alex. Disease and pest infection detection in coconut tree through deep learning techniques *Computers and Electronics in Agriculture Journal* SPRINGER 2020. **DOI:10.1016/j.compag.2021.105986**