Abhishek Verma

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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 based on activities of daily living (ADLs) and digital bio-markers of cancer patients to estimate chances of remission in future.
- Pre-processed and analyzed patient data using Pandas, Scikit Learn and other python libraries. Data collection was achieved using AWARE mobile sensing platform from mobile and fitbit devices along with RAPIDs data pipeline for streaming from cloud storage.

Research Data Analyst   **Mar 2021 — July 2021**
💼 University of Pittsburgh (Biomedical Informatics Lab)   Pittsburgh, PA
- Cleaned and Analyzed dataset with 1 million+ Patient Health Questionnaire (PHQ-9) to answer various question on efficacy of treatment for General Anxiety Disorder (GAD) and Major Depressive Disorder using Pandas, Numpy, Matplotlib, Pandas, Tableau.
- Developed reports, data analysis and visualizations for research paper. Managed and designed 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
- Developed new hidden layer architecture for facial emotion recognition in Convolutional Neural Network (CNN) using Tensorflow, Keras, Scikit Learn, Numpy to achieve a better predictive accuracy than existing architectures.
- Speech Recognition System by extracting Mel-frequency cepstral coefficients (MFCC) from audio files and employing them as input features in deep neural networks built using Tensorflow, Keras, Scikit learn for classification.

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 to spread awareness.

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**

TECHNICAL SKILLS

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