ABHISHEK DEEPAK DAS

● abhishekdas0697@cmu.edu ● (412) 708-4892 ● linkedin.com/in/abhishek-deepak-das ● github.com/Abhishek0697

EDUCATION

Carnegie Mellon University Pittsburgh, PA
Master of Science in Electrical and Computer Engineering, GPA: 3.6/4.0 Dec 2020
Relevant Coursework:
11-751: Speech Recognition and Understanding, 11-777: Multimodal Machine Learning, 16-720: Computer Vision

University of Mumbai Mumbai, India
Bachelor of Engineering in Electronics and Telecommunication Engineering, GPA: 8.9/10 May 2019
Relevant Coursework: Discrete Time Signal Processing, Image and Video processing

RESEARCH EXPERIENCE

CyLab Security and Privacy Institute - Biometrics Center, Carnegie Mellon University Pittsburgh, PA
Graduate Research Assistant Aug 2020- Present
Summer Research Intern May- Aug 2020

- Collaborated with a team of four to develop a pipeline for Plugs detection for Inventory management in Retail Stores
- Improving Fine-Grain Retail Product Image Classification by refining the state of the art architectures like EfficientNets, ResNets; and using data augmentation and regularization techniques like Cutmix, Label Smoothing, Ring Loss, etc.

Artificial Intelligence in Products Engineered for X (AiPEX) Lab, Carnegie Mellon University Pittsburgh, PA
Graduate Research Assistant Nov 2019- Apr 2020

- Collaborated with a Ph.D. student to train a Deepfake video detection architecture using CNN and Pulse rate estimation

ACADEMIC PROJECTS

Carnegie Mellon University, Pittsburgh, PA
Multi-Image Steganography Using Deep Neural Networks Jan- Apr 2020

- Enhanced a Convolutional Neural Network Encoder-Decoder architecture to successfully hide three secret images within a carrier image by using feature concatenation and adding noise to the carrier image

Acoustic Classification and Localization of sound sources for autonomous vehicles Sep- Dec 2019

- Performed separation of sounds from multiple audio sources by Non-Negative Matrix Factorization; Compared the quality of extracted features using classifiers like Support Vector Machine, KNN, Logistic Regression, and Decision Tree

EEG-Based Biometric Authentication for Brain-Computer Interfaces Sep- Dec 2019

- Utilized PCA to identify the feature vectors with maximum variance and determine the best subset of channels; Achieved 95% accuracy by using 5 channels (two channels at the temple region and three channels at the forehead) out of 64 channels

University of Mumbai, Mumbai, India
Evaluation of test papers using Machine Learning Aug 2018- Apr 2019

- Performed handwriting recognition using CNN; Collaborated with a team of three and processed the recognized responses with a correct set of answers for grading it with Siamese Manhattan LSTM network

Smart Refrigerator using IoT and Android Jan- Apr 2018

- Examined and integrated ultrasonic sensor and infrared sensor with Arduino for measuring the quantity of food items; Developed an SMS alert system to replenish and order groceries; Created an interactive interface for nutritive values and related recipe of food items integrating GSM module, NEO-6M GPS module with Arduino

SKILLS

Tools: (Advanced) PyTorch, NumPy, Scikit-learn, Jupyter, Keras; (Intermediate) Apache Spark, OpenCV, SQL, TensorFlow
Programming Languages: (Advanced) Python, MATLAB

PATENT

- Savvides Marios, **Das Abhishek**, et al., 2020. “The method and system of using RetailNet for inventory management”. U.S. Patent 63/107863, filed October 30, 2020. Patent Pending.