ABHISHEK DEEPAK DAS

● abhishekdas0697@cmu.edu ● (412) 708-4892 ● [Personal Website](#) ● [LinkedIn](#)

EDUCATION

Carnegie Mellon University Pittsburgh, PA
Master of Science in Electrical and Computer Engineering, GPA: 3.76/4.0 Dec 2020
Relevant Coursework: Multimodal Machine Learning, Speech Recognition and Understanding, 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 4 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.

SKILLS

Tools: (Advanced) PyTorch, NumPy, Scikit-learn, Jupyter, Keras; (Intermediate) Amazon EC2, Linux, OpenCV, TensorFlow
Programming Languages: (Advanced) Python, MATLAB

ACADEMIC PROJECTS

Carnegie Mellon University, Pittsburgh, PA
Detecting Hate Speech in Multimodal Memes Fall 2020

- Devised Object detection-based Image Captioning to tackle the adversarial "Benign Confounders" in the challenge dataset and integrated it with a multimodal architecture comprising of BERT and ResNeXt101
- Achieved 2% improvement in AUROC over the best multimodal baseline Visual BERT COCO; Presented our research ideas in the NeurIPS 2020 Hateful Memes Challenge session - Contributed Talks

User De-Identification over Speech/Dialogue exchange Fall 2020

- Implemented Listen, Attend and Spell model for Speech Recognition to achieve a WER of 15.89% on WSJ corpus; Collaborated with a team of 4 to design ASR-TTS based voice conversion with speech redaction on CMU Arctic dataset

Multi-Image Steganography Using Deep Neural Networks Spring 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

University of Mumbai, Mumbai, India
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

PUBLICATION

- K. Sunil, **Das Abhishek** et al. "Siamese Manhattan LSTM Implementation for Predicting Text Similarity and Grading of Student Test Papers", LNDECT, volume 36 (2020): pp 593-602. Springer Singapore

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.