Deep Chakraborty

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EDUCATION

University of Massachusetts Amherst — Amherst, MA
Master of Science in Computer Science; GPA: 3.88 / 4.0 — *Sep 2017 - May 2019*
- **Research**: Unsupervised hard example mining for improved object detection with Dr. Erik Learned-Miller
- **Courses**: Computer Vision, Deep Learning, Probabilistic Graphical Models, Distributed Systems, Software Engineering, Advanced Algorithms, Natural Language Processing

Manipal Institute of Technology — Manipal, India
Bachelor of Technology in Electronics & Communication Eng.; GPA 8.9 / 10.0 — *Aug 2012 – Jul 2016*
- **Teaching**: Instructed a workshop on *Computer Vision using Raspberry Pi* on behalf of IEEE
- **Courses**: Linux & Shell Scripting, Soft Computing, Embedded System Design, Digital Signal Processing

EXPERIENCE

Philips Lighting Research (now Signify) — Cambridge, MA
Research & Development Intern - Speech Processing & Deep Learning group — *May 2018 - Aug 2018*
- **Speech Emotion & Audio Event Detection**: Created a real-time speech emotion and audio event detection system using CNNs and Bidirectional LSTMs, for controlling lighting in office and home environments. Used Python, Keras and AWS.
- **Street-Light Segmentation from Google Street View Images**: Built a street-light detector using Mask R-CNN to identify and classify street-lights from Google street-view images for product recommendations.

Seagate Technology — Bangalore, India
Software Engineer - Product Quality Enhancement team, Cloud Systems group — *Jul 2016 - Jul 2017*
- **Performance Analysis**: Triaged system logs from enterprise storage arrays to find and fix bugs in product firmware causing data unavailability/loss. Advised L1/L2/L3 support teams on areas such as RAID, Cache, Paged Storage, Host Connectivity and SAN configuration. Received Recognition Award for quality case analysis.

Indian Institute of Technology — Mandi, India
Research Intern - Multimedia Analytics & Systems group — *Summer 2015 & Jan - Jun 2016*
- **Birdsong Recognition**: Created models for birdsong recognition using Deep Learning, Dynamic Kernel based SVMs and GMMs for a published comparative study. Used TensorFlow, SVMTorch C++ library, MATLAB.

PUBLICATIONS

- **Nonparallel Emotional Speech Conversion**
  Jian Gao, **Deep Chakraborty**, Hamidou Tembine, Olaitan Olaleye
  Submitted to International Conference on Acoustics, Speech, and Signal Processing (**ICASSP 2019**)

- **Unsupervised Hard Example Mining from Videos for Object Detection**
  S. Jin, A. Roy Chowdhury, H. Jiang, A. Singh, A. Prasad, **Deep Chakraborty**, Erik Learned-Miller
  European Conference on Computer Vision (**ECCV 2018**)

- **Bird Call Identification using Dynamic Kernel based Support Vector Machines and Deep Neural Nets**
  Deep Chakraborty, P. Mukker, P. Rajan, A. D. Dileep
  IEEE International Conference on Machine Learning and Applications (**ICMLA 2016**).

PROJECTS
Complete selection on **https://github.com/deepc94**

- **Face verification using maximal contribution from multiple faces**: Created an Improved face verification system by novel pooling of CNN extracted features from multiple face images. (Python/TensorFlow)
- **Semantic Segmentation using Dilated Convolutions**: Trained a CNN with context aggregation using dilated convolutions for improving scene labelling in outdoor scenes. Replicated state-of-the-art accuracy. (Python/Keras)
- **SVMTorch for user defined Kernels**: Modified SVMTorch, a fast C++ library for Support Vector Machines to train directly using user-defined dynamic kernel gram matrices that allow the classification of varying length speech signals.

COMPUTER SKILLS

- **Languages**: Python, C++, Matlab, Shell Script, Java, HTML
- **Tools & Frameworks**: Keras, TensorFlow, PyTorch, Caffe, OpenCV, RESTful APIs, LaTeX, Git, AWS, Linux