Deep Chakraborty

https://www.linkedin.com/in/deepc94/

dchakraborty@cs.umass.edu

(857) 209-1470

Education

- **University of Massachusetts Amherst** — Amherst, MA
  Doctor of Philosophy & Master of Science in Computer Science; GPA: 3.87 / 4.0 — *Sep 2017 - May 2023*
  - **Research**: Improving object detection in images with Dr. Erik Learned-Miller and Dr. Madalina Fiterau
  - **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 8.87 / 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

- **Signify (Philips Lighting) Research** — Cambridge, MA
  Research & Development Intern - Speech Processing & Deep Learning group — *May 2018 - Aug 2018*
  - **Speech Emotion and 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.
  - **Sensor Segmentation from Images**: Built an end-to-end system for large scale instance segmentation of Philips sensors from low quality google street view images to generate business insights.
- **Seagate Technology** — Bangalore, India
  Software Engineer - Product Quality Enhancement team, Cloud Systems group — *Jul 2016 - Jul 2017*
  - **Performance Analysis**: Triaged system logs from live enterprise storage arrays to find and fix bugs in product firmware causing data unavailability/loss. Advised L1/L2/L3 support on best practices for SAN components.
- **Indian Institute of Technology** — Mandi, India
  Research Intern - Multimedia Analytics & Systems group — *May 2015 - Jun 2016*
  - **Birdsong Recognition**: Created models for birdsong recognition using dynamic kernel based SVMs, GMMs and deep NNs. Modified SVMTorch C++ library to support user defined kernels for varying length speech signals.

Publications

- **Pedestrian Detection in Thermal Images using Saliency Maps**
  D. Ghose*, S.M. Desai*, S. Bhattacharya*, **D. Chakraborty***, M. Fiterau, T. Rahman
  (Published) Computer Vision and Pattern Recognition Workshops (**CVPR 2019**)
- **Nonparallel Emotional Speech Conversion**
  J. Gao, **D. Chakraborty**, H. Tembine, O. Olaleye
  (Accepted) Annual Conference of the International Speech Communication Association (**INTERSPEECH 2019**)
- **Unsupervised Hard Example Mining from Videos for Object Detection**
  S. Jin*, A. Roy Chowdhury*, H. Jiang, A. Singh, A. Prasad, **D. Chakraborty**, E. Learned-Miller
  (Published) European Conference on Computer Vision (**ECCV 2018**)
- **Bird Call Identification using Dynamic Kernel based Support Vector Machines and Deep Neural Nets**
  D. Chakraborty, P. Mukker, P. Rajan, A. D. Dileep
  (Published) IEEE International Conference on Machine Learning and Applications (**ICMLA 2016**).

Projects

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

- **Sentiment Style Transfer in Text**: Implemented a sequence-to-sequence RNN to convert negative reviews to positive reviews using unpaired training data. Improved accuracy from 63% to 72% using weak supervision from noisy pairs.
- **Few-shot Face Verification using Maximal Contribution**: Created an Improved face verification system by comparing CNN extracted features from few face images using novel pooling strategies to increase confidence.
- **Semantic Segmentation using Dilated Convolutions**: Trained a CNN with a context aggregation module using dilated convolutions, batch-norm and transfer learning to achieve 61% IOU in scene labelling for outdoor scenes.

Computer Skills

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