Ishan Deshpande

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Education

University of Illinois	**Urbana-Champaign**
M.S. ECE	*2015–2018*
GPA 3.9/4	
Indian Institute of Technology, Bombay	**Mumbai**
B.Tech. EE	*2011–2015*
GPA 9.49/10	

Publications

- **'Generative Modeling using the Sliced Wasserstein Distance'**,
  CVPR 2018
  Authors: *Ishan Deshpande, Zhiyu Zhang, Alexander Schwing*
  We presented an alternative formulation for Generative Adversarial Networks (GANs) with theoretical guarantees and demonstrated superior empirical stability and effectiveness compared to existing methods.
  Paper: SWG: CVPR 2018
  Code: github

- **'Generative Adversarial Neural Networks in the Creation of Synthetic Chest Radiographs: Can We Fool the Experts?'**
  RSNA 2018 (to be presented in Nov '18)
  Authors: *Ishan Deshpande, Alexander Schwing, Sanmi Koyejo, Naseer Siddiqui, Ayyis Pyrros, David Forsyth*
  Using generative adversarial networks, we produced chest X-ray scans which were found by radiologists to be comparable to true X-ray scans. This method has applications in dataset augmentation.

- **'A quantitative study of focus shift in Marathi'**,
  Prosody 2016
  Authors: *Preeti Rao, Hansjörg Mixdorff, Ishan Deshpande, Niramay Sanghvi and Shruti Kshirsagar*
  In this research project we studied and analysed, quantitatively, the effect of focus (stress) on acoustic features. Narrow and broad focus were contrasted. The study established the manner in which speakers of Marathi conveyed focus location.
  Paper: Prosody 2016

Work Experience

Vicarious	**San Francisco**
Research Engineer	*2018 July – present*

Working with the research team with responsibilities to
- Prototype and test research ideas
- Develop cross-team interface to establish faster research

Twitter	**San Francisco**
Software Engineer - Search Quality	*2017 May– August*

Worked in the search quality team under the Search team on the following projects:
- Related Searches - Applying machine learning techniques for identifying similar search queries
- Personalized topic type-ahead (autocomplete) for users

AMD	**Austin**
Co-op Engineer	*2016 May–August*

Worked in the Performance Modelling and Validation team.
Tasks included:
- Performance debugging, correlation of several blocks in the core;
- Verifying and correcting modelling of features in the simulator;
- Writing directed tests (micro-benchmarks).

Teaching Experience

University of Illinois   **Urbana-Champaign**
Machine Learning (CS 446)   *2018 Jan–*
Graduate Teaching Assistant for the course on machine learning. The course involves:
- Classical algorithms for learning from data;
- Current trends including deep learning.

University of Illinois   **Urbana-Champaign**
Intro. to A.I. (CS 440/ ECE 448)   *2017 August–December*
Graduate Teaching Assistant for the course on artificial intelligence. The course involves:
- Basics and classical techniques for planning;
- Machine learning approaches for AI.

University of Illinois   **Urbana-Champaign**
Distributed Systems (CS 425/ ECE 428)   *2017 January–May*
Graduate Teaching Assistant for the course Distributed Systems Engineering . The course involves:
- System design and alogrithms for scale-out systems;
- Building and implementing the systems.

University of Illinois   **Urbana-Champaign**
Computer Systems Engineering (ECE 391)   *2016 August–December*
Graduate Teaching Assistant for the course on OS. The course involves:
- Modifying and using kernel-level features such as interrupts, tasklets, etc, for interfacing with hardware;
- System software to control interaction between the hardware and applications.

Course Projects

- **One shot learning with Memory Augmented Neural Networks**
  Implemented a memory-augmented neural network tasked with meta-learning using the Omniglot character database. The neural network learns to use an external memory module as a cache, and is capable of achieving high classification accuracies on unseen datasets within a few epochs.
- **Action Recognition with Deep Neural Networks**
  Implemented action classification on the UCF-101 dataset. Features are extracted using a pre-trained convolutional network, which we fine-tuned for this dataset. Classification of actions is being tested with a recurrent neural network, which is provided with a sequence of frames.
- **Style Transfer Using Deep Neural Networks**
  Implemented a neural network architecture that uses convolutional neural networks to extract the style of one image and impose it onto another. This was tested by transferring the style of different painters onto natural scenes and artificial scenes.

Programming Skills

- C,C++, Python, Java
- Tensorflow
- Linux, Bash

Courses

- Neural Networks and Deep Learning, Pattern Recognition, Image and Speech Processing
- Parallel Computer Architecture, Compilers, Computer Systems Organization
- Distributed Systems, Operating Systems, Computer Systems Analysis