Samarth Mishra

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EDUCATION	
• **Georgia Institute of Technology**	***Atlanta, GA***
Masters in CS with specialisation in ML (GPA : 4.0)	Expected May 2018
• **Indian Institute of Technology, Bombay**	***Mumbai, India***
B. Tech *(Honors)* in CS and Minor in EE (GPA : 9.46/10)	2013-2017

WORK EXPERIENCE

MTS - Intern (Machine Learning)   ***Nutanix Inc., San Jose***   Summer 2018
Researched techniques and laid the foundations of a system for handling **natural language queries** on a multi-cluster management database using **semantic parsing** and **machine learning** methods

Software Engineering Intern   ***Samsung HQ, Seoul***   Summer 2016
Developed a **mobile application** on Tizen3.0 OS for **process monitoring** via **log parsing**, with a user friendly UI, notification alerts and active responses for misbehaving processes

Visiting Scientist   ***IST Austria***   Summer 2015
Implemented a **fast reachability algorithm** on weighted recursive state machines(RSMs) with finite height semiring weights. Established significant speed imrpovements over jMoped

Teaching
- ***Graduate Teaching Assistant*** for AI at Georgia Tech   (Spring 2018, Fall 2018)
- ***Teaching Assistant*** for 3 classes in CS and Math at IIT Bombay :   (2015-17)
  Computer Networks, Intro to Computer Programming, Intro to Linear Algebra

PROJECTS

Self-Directed Incremental Learning   *(Master's Project)*   *Fall 2017 - Present*
Developed a **new dataset** of rendered objects, for **incremental object recognition** learning. Established baselines and studied ablations for incremental learning methods in the novel problem setting of **self-directed learning**. In preparation for submission to CVPR'19

GPGPU solutions of Linear Least Squares Problem   *Spring 2018*
Implemented the following general purpose GPU (GPGPU) solutions for the linear least squares problem and compared with the corresponding CPU implementations : **Householder** QR decomposition, **Cholesky** decompostion and **Givens** QR decompostion

Kernel Dictionary Learning   *(Bachelor's Thesis)*   2016-17
Implemented **kernel dictionary learning** on **spherical manifold** and compared against a euclidean baseline. Studied the effect of different **regularizers**. Performed ablation studies on an **image classification** task for different image noise levels and varying regularization parameters

Medical Image Segmentation : DeepCut   Spring 2017
Implemented **DeepCut** image segmentation algorithm and used it to segment out the heart from human chest MR images. Used a **conv net** for soft segmentation and a **dense CRF** for regularization.

Reinforcement Learning : Carrom playing bot   Fall 2016
Implemented and evaluated three different strategies (**deep Q-learning**, **deep deterministic policy gradients**, and **hand coding heuristics**) for building a carrom playing bot

Equillibria in multiplayer timed games   *(RnD project)*   Fall 2015
Proved undecidability of determining the existence of cost-bounded (**Nash**, **Stackelberg** or **Incentive**) equilibrium for a timed multiplayer non-competetive game with 3 or more clocks

SKILLS

- **Launguages :** C | C++ | Java | Python | MATLAB | Bash | HTML | Javascript | CSS | $\LaTeX\,2_\varepsilon$
- **Technologies :** PyTorch | Tensorflow | CUDA | Numpy | Hadoop | Pig | Spark | D3 | Elasticsearch

PUBLICATIONS

Krishnendu Chatterjee, Bernhard Kragl, *Samarth Mishra*, Andreas Pavlogiannis:
Faster Algorithms for Weighted Recursive State Machines.
26th European Symposium on Programming (ESOP), 2017

ACHIEVEMENTS AND AWARDS

• Awarded **Institute Academic Prize**, IIT Bombay	2014
• **All India Rank 30** in JEE-Main among 1.3 million candidates	2013
• Gold medal in **Indian National Physics Olympiad** for being among ***top 35*** in India	2013
• **PM's Trophy Scholarship**, awarded by Steel Authority of India Ltd.	2013-17
• Kishore Vaigyanik Protsahan Yojana (**KVPY**) scholar : **All India Rank 27**	2012-13
• National Talent Search Examination (**NTSE**) scholar	2009-12

OTHER ACTIVITIES

- Department placement coordinator for department of CSE, IIT Bombay, 2016-17
- Web and Coding Club Hackathon, 2014 : built an ad-removing chrome extension
- 3rd position in Entertainment Quiz, Freshiezza, IIT Bombay 2013
- Semi-finalist, Prof. Brahm Prakash Memorial Materials Quiz, IIM Kalpakkam, 2012