

Samarth Mishra

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EDUCATION	<ul style="list-style-type: none">• Georgia Institute of Technology Atlanta, GA <i>Masters in CS with specialisation in ML</i> (GPA : 4.0) Expected May 2019 Advisor : Prof. James M. Rehg• Indian Institute of Technology, Bombay Mumbai, India <i>B. Tech (Honors) in CS and Minor in EE</i> (GPA : 9.46/10) 2013-2017
WORK EXPERIENCE	<p>MTS - Intern (Machine Learning) <i>Nutanix Inc., San Jose</i> 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</p> <p>Software Engineering Intern <i>Samsung HQ, Seoul</i> 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</p> <p>Visiting Scientist <i>IST Austria</i> Summer 2015 Implemented a fast reachability algorithm on weighted recursive state machines(RSMs) with finite height semiring weights. Established significant speed improvements over jMoped</p> <p>Teaching</p> <ul style="list-style-type: none">• 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	<p>Self-Directed Incremental Learning (<i>Master's Project</i>) <i>Fall 2017 - Present</i> 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. Working on mitigating the catastrophic forgetting problem via a robust feature representation learning. In preparation for submission to CVPR'19</p> <p>GPGPU solutions for Linear Least Squares Problem <i>Spring 2018</i> 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 decomposition and Givens QR decomposition</p> <p>Kernel Dictionary Learning (<i>Bachelor's Thesis</i>) 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</p> <p>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.</p> <p>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</p> <p>Equilibria in multiplayer timed games (<i>RnD project</i>) 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</p>
SKILLS	<ul style="list-style-type: none">• Launguages : C C++ Java Python MATLAB Bash HTML Javascript CSS \LaTeX 2ϵ• Technologies : PyTorch Tensorflow CUDA Numpy Hadoop Pig Spark D3 Elasticsearch
PUBLICATIONS	Krishnendu Chatterjee, Bernhard Kragl, <i>Samarth Mishra</i> , Andreas Pavlogiannis: Faster Algorithms for Weighted Recursive State Machines. <i>26th European Symposium on Programming (ESOP), 2017</i>
ACHIEVEMENTS AND AWARDS	<ul style="list-style-type: none">• 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	<ul style="list-style-type: none">• Department placement coordinator for department of CSE, IIT Bombay, 2016-17• Web and Coding Club Hackathon, IIT Bombay 2014 : built an ad-removing chrome extension• Semi-finalist, Prof. Brahm Prakash Memorial Materials Quiz, IIM Kalpakkam, 2012