

SANYAM KAPOOR

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EDUCATION

New York University (*Courant Institute of Mathematical Sciences*) Sept 2017 - present
Masters in Computer Science, GPA: **3.94/4.0**

- **Masters Thesis/Research Fellowship** (awarded to 2 students), Fall 2018

Indian Institute of Technology (IIT) Hyderabad, India Aug 2012 - May 2016
Bachelors in Computer Science and Engineering, **GPA: 8.62/10.0**

- **TODAI Award, University of Tokyo** (for outstanding academic performance), 2013
- **Academic Excellence Award** (for highest semester GPA), 2012

RESEARCH EXPERIENCE

Survival Analysis for Time-Dependent Covariates Oct 2018 - present
Advisor: Rajesh Ranganath

- Identified critical prediction tasks in Clinical Healthcare using time series data
- Proposed a variant of *Deep Markov Model* to model patient physiology

Learning to Sample using MCMC Sept 2018 - present
Advisor: Joan Bruna and Cinjon Resnick

- Investigated key failures of modern sampling techniques like Hamiltonian Monte Carlo
- Proposed parametrized *Ito processes* trained for Maximum Mean Discrepancy

Zero-sum Games in Cooperative Multi-Agent Environments Mar 2018 - May 2018
Advisor: Joan Bruna and Cinjon Resnick

- Implemented Reinforcement Learning agents based on Q-Learning and Curriculum Learning
- Investigated problems in modeling teammates/opponents in a non-stationary environment

Machine Learning for Predicting Protein Structures Jan 2018 - May 2018
Advisor: Rob Fergus and Alexander Rives

- Reverse engineered GROMACS C++ source code to use in Python
- Implemented Monte-Carlo sampling for exploration of molecule topology space

PUBLICATIONS

- *Resnick, C., *Raileanu, R., **Kapoor, S.**, Peysakhovich, A., Cho, K., and Bruna, J. Back-play: “Man muss immer umkehren”. 2018
- **Kapoor, S.** Multi-agent reinforcement learning: A report on challenges and approaches, 2018

PROFESSIONAL EXPERIENCE

Software Engineering Intern, Google Sunnyvale, CA (google.com) May 2018 - Aug 2018

- Implemented an end-to-end Natural Language Code Search example on Kubeflow (Cloud AI)
- Designed Apache Beam Pipelines and Neural Network modules using TensorFlow
- Demo proposal accepted to KubeCon North America 2018

Software Engineer, Headout Bengaluru, India (headout.com) Dec 2016 - Jul 2017

- Led internal developer tooling, reduced developer on-boarding from days to half an hour
- Executed migration to a CI/CD infrastructure for automated deployments based on Docker and AWS, slashed application rollback downtime by 100%
- Designed A/B experiments for new features on the website

Co-Founder, StoryXpress, Hyderabad, India (storyxpress.co) May 2013 - Aug 2016

- Co-founded the cloud video service for large scale ad creation from static media
- Designed and implemented an in-house Video Rendering Engine on top of OpenGL, generated 2000+ videos per month
- Delivered enterprise APIs and Web Application for enterprises like Target

TEACHING EXPERIENCE

Teaching Assistant, *Introduction to Machine Learning* by Kyunghyun Cho, NYU, Spring 2019

Head Grader, *Machine Learning* by Julia Kempe, NYU, Spring 2019

Section Leader, *Inference and Representation* by Joan Bruna, NYU, Fall 2018

Grader, *Introduction to Machine Learning* by Iddo Drori, NYU, Fall 2018

Recitation Leader, *Data Structures* by Anasse Bari, NYU, Spring 2018

Grader, *Machine Learning* by David Rosenberg, NYU, Spring 2018

OTHER HONORS AND AWARDS

StackOverflow Top Contributor, top 9% all time among 10 million members

NASSCOM Emerge 50, *StoryXpress* among 500+ startups across India for innovation impact, 2015

HYSEA Best Software Product, Student Innovation, *StoryXpress* among 100+ startups, 2015

Microsoft Build the Shield, India, First Runner Up among 280 teams, 2015

ACM ICPC Amritapuri Regionals finalist among 1500+ teams, 2013

OTHER PROJECTS

TorchRL - Scalable Reinforcement Learning framework in PyTorch with modular implementations of algorithms like DQN, A2C, PPO, DDPG

MariaDB Scheduler - Proof-of-Concept on top of DC/OS based on a very early-stage framework

Docker Consul - Docker container with networking tweaks for quorum management. 25000+ pulls.

QuickSlots v2.0 - Timetable Scheduler modeled as Min-Cost Bipartite Matching Problem

COOL Compiler - Lexing, Parsing and Semantic Phases for the Classroom Object Oriented Language

TECHNICAL SKILLS

Programming Languages: Python, C, C++, Node, Java, Go

Technologies: PyTorch, TensorFlow, CUDA, Scikit-learn, MySQL, React, Docker, Ansible, Vagrant, OpenCV, OpenGL