Swapneel Mehta

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EDUCATION

Ph. D. Student at the Centre for Data Science, New York University, GPA 3.8   **Exp. '24**
- Mentors: Kyle Cranmer, Rajesh Ranganath. Probabilistic Inference and Causal Discovery

CDS Fellowship (2019-24), IRIS-HEP Fellow (2020-21)

Bachelor in Computer Engineering, University of Mumbai, GPA 9.23   **2014 - 2018**
- Applied Math, Graph Theory, Machine Learning, Artificial Intelligence, Algorithms

PROFESSIONAL EXPERIENCE

Research Intern (Summer + Fall), Adobe Inc., San Jose   **May '20 - Present**
- Trending Hashtag Recommendation for Videos using Graph Neural Nets (details withheld pending publication).
- Accepted a part-time offer to continue the project to focus on scalability of graph neural networks, extending to personalized hashtag recommendation, and expanding the modalities we leverage for predictions.

Technical Student, European Org. for Nuclear Research (CERN), Geneva   **Mar '18 - Jun '19**
- Built graph neural networks for particle track reconstruction using collision data from the Large Hadron Collider.
- Optimized and extended the 'DeepJet' deep learning framework for jet physics, built using Tensorflow, Python, and custom C++ extensions for multithreaded operations on systems using the CMS Software Environment.

Openlab Intern, European Org. for Nuclear Research (CERN), Geneva   **June '17 - Aug '17**
- Developed an ensemble of unsupervised learning models for anomaly detection in database connections.
- Published a first-author short paper, receiving a special mention in the machine learning track at 2nd Springer International Conference on Integrated Intelligent Computing, Communication, and Security, 2018.

*(Remote) Research Intern, Dr. S. Sahasrabudhe, IIT-B, Mumbai   **Aug '16 - May '17**
- Automated the evaluation for 3D Modeling assignments in Blender; Course Instructor for the MOOC 'Skill Development in Animation' catering to over 5,000 participants on the IITBombayX platform.
- Published a first-author short paper at IEEE International Conference on Advanced Learning Technologies, 2018.

SWE Intern, Smokescreen Technologies, Mumbai   **Nov '16 - Mar '17**
- Combined low-latency network scans, hostname clustering, intelligent decoys, and automated deployment using custom-built modules integrated into the NASSCOM-DSCI award-winning IllusionBlack software, 3rd Gen., 2017.
- Built a proof-of-concept honeypot with ICS/SCADA services responding on open ports in a FreeBSD 'jail' using open-source project 'Conpot'; mentored 2 interns from IIT-Bombay.

SWE Intern, Falkonry Software Solutions, Mumbai   **July '16 - Sept '16**
- Developed client API functions to enable real-time data streaming and subscription-based alerts in the three client connectors released as open-source codebases in Java, Python and Javascript.
- Added tests for the primary product to support concurrency using multithreading and asynchronous calls.

Summer Intern, Microsoft Research, IIT Bombay, Mumbai   **May '16 - July '16**
- Created a Google Analytics Dashboard to track and monitor user interactions on the "Lokacart" Android e-commerce application using the Enhanced E-commerce SDK.
- Presented the project to Microsoft Research and a committee of IIT-B faculty (video available: bit.ly/iitblokacart).

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PUBLICATIONS / TALKS

Slides and Publications available at swapneelm.github.io/presentations and Google Scholar

- **Panelist and Co-Organizer - NYU AI School**

  Panelist on Careers in AI (2019), invited to be a co-organizer for the upcoming edition in 2021!

- **DeepJet: A Machine Learning Framework for High-energy Physics**
  Poster Presentation at Nvidia GPU Tech Conference 2019, USA;
  Google Cloud Poster Award at the Deep Learning Indaba 2018, South Africa;
  Poster Presentation at the Machine Learning Summer School 2018, Spain;
  Tutorial at the CMS Machine Learning Workshop, July 2018.

- **DeepJet: A Portable Machine Learning Framework for High-energy Physics**
  Oral Presentation at the 2nd CERN IML Machine Learning Workshop, 2018;
  Invited Talk, CVIT Lab, International Institute of Information Technology (IIIT), Hyderabad, India.

- **Autograding Pipeline for 3D Modeling Assignments in MOOCs**

  Short Paper at the 18th IEEE International Conference on Advanced Learning Technologies, 2018.

- **A Big Data Architecture for the Detection of Anomalies within Database Connection Logs**
  Short Paper, ***Special Mention*** at the 2nd Springer International Conference on Integrated Intelligent Computing, Communication & Security, 2018.

- **Reviewer**, Journal of Parallel and Distributed Computing (JPDC), October 2018.

COMMUNITY INVOLVEMENT

- **Contributor, Depth First Fellowship, Jane Street:** Participated in a 6-8 week discussion group with international researchers to create materials to explain Stein's Method in an accessible manner.

- **Mentor, The Grand Challenge, CERN/RCA:** Guided 4-5 teams of students from the Royal College of Art in London on leveraging AI/ML for designing sustainable solutions in science for The Grand Challenge.

- **Contributing Author, Open Source For You Magazine:** Featured articles on Artificial Intelligence and Machine Learning, the blockchain, Linux, Docker, Puppet, Windows, and tutorials on Jekyll, NodeJS, Git, among others reaching over 200,000 readers till date (goo.gl/57NN6Y).

- **Founding Member, DJ Unicode:** Launched a student chapter undertaking open-source web and app (Android) development projects jointly mentoring a team of ~70 sophomores and juniors with selections for Google Summer of Code, international internships, and hackathon winners across the country (github.com/djunicode).

- **Course Instructor, Fundamentals of 3D Viz., IITBombayX:** Catered to an audience of over 5,000 learners. The course was recently selected as one of the Global edX Prize Finalists, 2019 (top 10 edX courses).

- **Machine Learning Lead, Stanford Scholar Initiative:** Led an international collaboration of students and researchers in building scientific talks to make state-of-the-art research more accessible (scholar.stanford.edu).

AWARDS / FELLOWSHIPS

- Delegate at the Schonfeld Quant Conference, NYC 2019 (**15% acceptance**).
- **2nd Prize**, CodaLab Contest, Machine Learning in High-energy Physics Summer School, Oxford, 2018
- Economic Times Campus Stars Class of 2018 - Selected as one of **India's Top 33 Engineers**
- Stanford Graduate School of Business, Reliance Scholarship Finalist 2017 (**youngest finalist**; $150,000)
- Indian Academies of Science Fellowship, 2017
- HackDAIICT - 1st Runners-up; offer for incubation by Indian Space Research Organisation, 2017
- Computer Society of India TechNext Hackathon, IIT Bombay, Winners, 2017
- Chief Minister's Scholarship, **Top 1% candidates** in Higher Secondary Certificate (12th Grade), 2014