

# Harvineet Singh

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## CONTACT INFORMATION

Ph.D. Student  
Center for Data Science  
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## RESEARCH INTERESTS

Interactive Machine Learning, Causal Inference, Algorithmic Fairness

## EDUCATION

**Ph.D. in Data Science,** CGPA: 4.0/4.0 (Year 2018 - 2019)  
*Center for Data Science, New York University, NY, US* August 2018 - Present

**Integrated Master of Technology in Mathematics and Computing,** CGPA: 8.7/10  
*Indian Institute of Technology (IIT) Delhi, India* July 2010 - July 2015

**Central Board of Secondary Education, Class XII,** Marks(%): 92.40  
*D.A.V. Public School, Kota, Rajasthan* 2010

## PUBLICATIONS

- Harvineet Singh, Rina Singh, Vishwali Mhasawade and Rumi Chunara.  
**Fair Predictors under Distribution Shift.**  
*Workshop on Fair ML for Health at Conference on Neural Information Processing Systems (NeurIPS)* 2019. *Oral Presentation.* [Link].
- Gaurush Hiranandani\*, Harvineet Singh\*, Prakhar Gupta\*, Iftikhar A. Burhanuddin, Zheng Wen and Branislav Kveton.  
**Cascading Linear Submodular Bandits: Accounting for Position Bias and Diversity in Online Learning to Rank.**  
*Conference on Uncertainty in Artificial Intelligence, (UAI)* 2019. *Oral Presentation.* [Link].
- Aadhavan M. Nambhi\*, Bhanu P. R. Guda\*, Aarsh P. Agarwal\*, Gaurav Verma, Harvineet Singh and Iftikhar A. Burhanuddin.  
**Stuck? No Worries!: Task-aware Command Recommendation and Proactive Help for Analysts.**  
*ACM International Conference on User Modeling, Adaptation, and Personalization, (UMAP)* 2019. [Link].
- Moumita Sinha, Vishwa Vinay and Harvineet Singh.  
**Modeling Time to Open of Emails with a Latent State for User Engagement Level.**  
*ACM International Conference on Web Search and Data Mining, (WSDM)* 2018. [Link].
- Ritwick Chaudhry\*, Harvineet Singh\*, Pradeep Dogga, and Shiv Saini.  
**Modeling Hint-Taking Behavior and Knowledge State of Students with Multi-Task Learning.**  
*International Conference on Educational Data Mining, (EDM)* 2018. [Link].
- Sumit Shekhar, Dhruv Singal, Harvineet Singh, Manav Kedia and Akhil Shetty.  
**Show and Recall: Learning What Makes Videos Memorable.**  
*Workshop on MBCC at IEEE International Conference on Computer Vision (ICCV)* 2017. [Link].
- Siddharth Bora, Harvineet Singh, Anirban Sen, Amitabha Bagchi and Parag Singla.  
**On the role of conductance, geography and topology in predicting hashtag virality.**  
*Springer Journal on Social Network Analysis and Mining (SNAM)* 2015. [Link].

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\*Equal Contribution

WORK EXPERIENCE	<b>Adobe Research</b> , India : Research Engineer <i>Member of Big Data Experience Lab</i> Devised and prototyped machine learning algorithms for user behavior prediction and recommender systems. Worked with product teams to transfer technologies to Adobe’s digital marketing solutions.  <b>Adobe Research</b> , India : Research Internship <i>Predicting abandonment of online shopping carts</i> Devised an algorithm to predict return of customers after an online shopping session and tested it on large-scale web clickstream datasets. Work productized as a feature in Adobe Experience Cloud.  <b>Adobe Research</b> , India : Research Internship <i>Assisting social content creators by suggesting what, when and how to post</i> Worked on a system to infer user interests and demographic attributes from online social feed. Developed an approach based on text mining and graph analysis to find most receptive user segments. Implemented a web-based tool, as a proof-of-concept prototype, built using HTML, PHP and Python to fetch Twitter feeds and display results of data analysis.	July 2015 - August 2018  PI: Dr. Moumita Sinha May 2014 - July 2014  PI: Mohit Garg May 2013 - July 2013
PATENTS	<ul style="list-style-type: none"><li>Sumit Shekhar, Dhruv Singal, Harvineet Singh and Atanu Sinha. ‘Summarizing Video Content based on Memorability of the Video Content’. U.S. Patent No. 10/311,913.</li><li>Moumita Sinha, Kandarp S. Khandwala, Harvineet Singh and D. P. Tejas. ‘Predicting Unsubscription of Subscribing Users’. U.S. Patent No. 16/192,517.</li><li>Prakhar Gupta, Iftikhar Ahamath Burhanuddin, Harvineet Singh and Atanu Sinha. ‘Intelligent Analytics Interface’. U.S. Patent No. 10,546,003.</li></ul>	
AWARDS AND ACHIEVEMENTS	<ul style="list-style-type: none"><li>Awarded <b>HRD Scholarship</b> by Ministry of Human Resource Development for academic excellence at IIT, 2014.</li><li><b>IITD Semester Merit Award</b> for meritorious academic performance (top 7% of batch).</li><li><b>All India Rank 813</b> in IIT-JEE (entrance examination) 2010 among 0.46 million students.</li><li>Awarded <b>Travel Grant</b> to attend UAI 2019, FairML4H@NeurIPS 2019.</li></ul>	
POSITIONS OF RESPONSIBILITY	<b>Internship Mentor, ARISE Program</b> , NYU Tandon <ul style="list-style-type: none"><li>Mentored two high school students in a STEM research exposure program.</li></ul> <b>Internship Project Supervisor</b> , Adobe Research <ul style="list-style-type: none"><li>Ritwick Chaudhry and Pradeep Dogga, <i>Personal assistants for online education</i></li><li>Neha Banerjee and Sahil Garg, <i>Optimal send time strategy for email campaigns</i></li></ul> <b>Teaching Assistant:</b> Taught tutorial classes for 2 introductory mathematics courses at IIT Delhi.  <b>Paper Reviewer:</b> ML4H@NeurIPS 2019, RecSys 2017 (sub-reviewer), UAI 2017 (sub-reviewer).	
TECHNICAL SKILLS	<b>Programming Languages:</b> (Proficient) Python, R; (Familiar) MATLAB, Java, JavaScript <b>ML Frameworks:</b> PyTorch, Tensorflow, Apache Spark <b>Applications and Tools:</b> Basic Bash Scripting, Git, L <sup>A</sup> T <sub>E</sub> X	
RELEVANT COURSES	<b>Statistics</b> Probability and Stochastic Processes Inference and Representation Causal Inference Probabilistic Time Series Analysis Multivariate Statistical Methods	<b>Computer Science, Mathematics</b> Fundamentals of Machine Learning Optimization Methods and Applications Analysis and Design of Algorithms Programming Languages Database Management Systems