

Ashudeep Singh

*PhD Candidate, Computer Science
Cornell University*

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Research Interests

Fairness and Responsibility aspects of Machine Learning for Search and Recommendation systems.

Education

2015-present **Ph.D. Computer Science**, *Cornell University*, Ithaca, NY.

Advisor: Thorsten Joachims

Thesis Committee: Solon Barocas, Karthik Sridharan, David Mimno.

Topic: Fairness in Ranking and Recommendation Systems.

Grade Point Average (GPA)– 4.0

2010–2015 **B.Tech.-M.Tech. Dual Degree**, *Indian Institute of Technology Kanpur*, India.

M.Tech. Cumulative Performance Index (CPI)– 10/10

BTech. Cumulative Performance Index (CPI)– 9.6/10

Selected Publications

Marco Morik*, Ashudeep Singh*, Jessica Hong, Thorsten Joachims. **“Controlling Fairness and Bias in Dynamic Learning-to-Rank”**. In Proceedings of 43rd International ACM SIGIR Conference on Research and Development in Information Retrieval 2020. ☞ **[Best Paper Award]**

Ashudeep Singh, Yoni Halpern, Nithum Thain, Konstantina Christakopoulou, Ed H. Chi, Jilin Chen, and Alex Beutel. **“Building Healthy Recommendation Sequences for Everyone: A Safe Reinforcement Learning Approach”**. In FaccTRec Workshop at ACM RecSys, 2020. ☞

Ashudeep Singh and Thorsten Joachims. **“Policy Learning for Fairness in Ranking”**. In Proceedings of Advances in Neural Information Processing Systems (NeurIPS) 2019, Vancouver, BC, Canada. ☞

Ashudeep Singh and Thorsten Joachims. **“Fairness of Exposure in Rankings”**. In KDD '18: The 24th ACM SIGKDD International Conference on Knowledge Discovery & Data Mining (SIGKDD), August 19–23, 2018, London, United Kingdom. ACM, New York, NY, USA. ☞

Ashudeep Singh, Thorsten Joachims. **“Equality of Opportunity in Rankings”**. At Workshop on Prioritising Online Content at NeurIPS 2017. ☞

Ashudeep Singh, Thorsten Joachims. **“Learning item embeddings using biased feedback”**. At Causal Inference and Machine Learning for Intelligent Decision Making Workshop at NeurIPS 2017. ☞

Tobias Schnabel, Adith Swaminathan, Ashudeep Singh, Navin Chandak, Thorsten Joachims. **“Recommendations as Treatments: Debiasing Learning and Evaluation”** In Proceedings of The International Conference on Machine Learning (ICML), 2016. ☞

Research Internships

- January–May **Google Brain**, New York, NY.
2020 “**Avoiding Unhealthy Recommendation Experiences using Safe Reinforcement Learning**”
Research Internship project hosted by Alex Beutel (Google Brain).
- May–August **Microsoft Research**, Montreal, QC, Canada.
2019 “**Feedback Loops and Producer-side fairness in Recommender systems**”
Research Internship project working with Fernando Diaz (FATE Group).
- May–August **Facebook**, Menlo Park, CA.
2017 “**Active Learning for Multilabel Classification for the Newsfeed**”
Research internship project mentored by Khalid El-Arini (Feed Content Classification Team @ Newsfeed).
- May–August **Microsoft Research Lab**, New York City, NY.
2016 “**Contextual Bandits for Personalization in fitness tracking applications**”
Research internship project mentored by John Langford (MSR NYC) and Ryen White (Microsoft Health Intelligence and MSR Redmond).

Awards and Achievements

- 2020 Awarded the **Best Paper Award** at ACM SIGIR 2020.
- 2019 Awarded the NeurIPS Travel Award to attend NeurIPS 2019, Vancouver, BC, Canada.
- 2019 Outstanding TA Award by the Department of Computer Science for CS6780: Advanced Machine Learning class.
- 2018 Awarded the ACM Student Travel Award to attend SIGKDD 2018, London, UK.
- 2015 **Ranked first** in the M.Tech. batch of 108 students graduating in 2015 at IIT Kanpur.
- 2011–2015 Awarded **Academic Excellence Award** for outstanding academic achievements at IIT Kanpur for four consecutive years.
- 2010–2014 Awarded **CBSE Merit Scholarship** for Professional Studies by Central Board of Secondary Education, India.
- 2012 Recipient of **Summer Undergraduate Research Grant for Excellence (SURGE)**, granted by Dean Resource Planning and Generation, IIT Kanpur.

Professional Service

Reviewer for ICLR 2021, NeurIPS 2020, ICML 2020, AAAI 2020, ICML 2019, NeurIPS 2019.
Program Committee of ACM FAccT Conference 2021, FAccTRec workshop at ACM RecSys 2020, FACTS-IR workshop at SIGIR 2019, Repl4NLP workshop at ACL 2018.

Positions of Responsibility and Extra Curricular Activities

- Organized the Machine Learning Discussion Group at Cornell University. ☞ (2016–18)
- Coordinated the PhD Visit Day 2016 for Cornell Computer Science as a **Visit Day Czar**. (2016)
- Student Guide, Academic Mentor, and Link Student for Counselling Service, IIT Kanpur. (2011–13)

Teaching

- Teaching Assistant** for CS6780: Advanced Machine Learning, CS4786: Machine Learning for Data Science, CS4780/5780 : Machine Learning for Intelligent Systems at Cornell University. (2015–19)
 - Awarded an Outstanding TA Award for CS 6780: Advanced Machine Learning. (Spring 2019)
- Teaching Assistant** for CS679: Machine Learning for Vision, and ESC101: Fundamentals of Computing at IIT Kanpur. (2014–15)