Ashudeep Singh

Computer Science PhD Student, Cornell University

349 Gates Hall
Cornell University
Ithaca, NY, USA-14850
℘ (607)-379-7806
✉ ashudeep@cs.cornell.edu
🖿 www.ashudeepsingh.com

Education

2015-present **Ph.D. Computer Science**, *Cornell University*, Ithaca, NY.
Advisor: Thorsten Joachims
Relevant Courses: Machine Learning Theory, Advanced topics in Machine Learning, Design and Analysis of Algorithms, Causality and Learning for Intelligent Decision Making, Ethics and Policy in Data Science
Grade Point Average: 4.09

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

Awards and Achievements

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.

2010 Awarded the **Certificate of Merit** in English for being in the top 0.1% students in the country for All India Senior School Certificate Examination.

Publications

Ashudeep Singh, Thorsten Joachims. **"Equality of Opportunity in Rankings"**. Workshop on Prioritising Online Content at NIPS 2017. [pdf]

Ashudeep Singh, Thorsten Joachims. **"Learning item embeddings using biased feedback"**. Causal Inference and Machine Learning for Intelligent Decision Making Workshop at NIPS 2017. [pdf]

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. [pdf]

David Adamson, Akash Bharadwaj, Ashudeep Singh, Colin Ashe, David Yaron, Carolyn P. Rosé. **"Predicting Student Learning from Conversational Cues"**. In Proceedings of 12th International Conference of Intelligent Tutoring Systems (ITS), Honolulu, HI, USA, June, 2014. [pdf]

David Adamson, Divyanshu Bhartiya, Biman Gujral, Radhika Kedia, Ashudeep Singh, Carolyn P. Rosé. **"Automatically Generating Discussion Questions"**. In Proceedings of 16th International Conference of Artificial Intelligence in Education (AIED), Memphis, TN, USA, July, 2013. [pdf]

Ongiong Projects

2017-ongoing — **Fairness in Ranking**, *Research Project with Thorsten Joachims.*
Working on formulating the notion of fairness in ranking systems. We define *Equal Opportunity* constraints in terms of the exposure items from the protected groups get. We also propose how to train ML algorithms to satisfy them and concept of the cost of fairness.

Aug 2017-ongoing — **Active Multilabel classification**, *Mentoring two undergraduates–Pian Pawakapan and Junyoung Lim, for a research project advised by Thorsten Joachims.*
Building counterfactual estimator based learning methods to actively sample multilabel data alongside training the model

Research Internships

May–August 2017 — **Facebook**, *Menlo Park, CA.*
"Active Learning for Multilabel Classification"
Research internship project mentored by **Khalid El-Arini** *(Feed Content Classification Team @ Newsfeed)*

May–August 2016 — **Microsoft Research Lab**, *New York City, NY.*
"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)*

May–July 2014 — **Cornell University**, *Ithaca, NY.*
"Using Preference Data to embed documents in Metric spaces"
Research Project mentored by **Prof. Thorsten Joachims** *(Cornell University)*

May–July 2013 — **Carnegie Mellon University**, *Pittsburgh, PA.*
"A Computational Model for Quantitative Discourse Analysis in a Collaborative Learning Setting"
Research Project mentored by **Prof. Carolyn P. Rosé** *(Language Technologies Institute, CMU)*

Teaching

- **Teaching Assistant** for **CS4786: Machine Learning for Data Science** **(Spring 2016)**
  Faculty Instructor: Prof. Karthik Sridharan (Cornell University)
- **Teaching Assistant** for **CS4780/5780 : Machine Learning for Intelligent Systems** **(Fall 2015)**
  Faculty Instructor: Prof. Kilian Weinberger (Cornell University)
- **Teaching Assistant** for **CS679–Machine Learning for Vision** **(Spring 2015)**
  Faculty Instructor: Prof. Vinay P. Namboodiri (IIT Kanpur)
- **Tutor (Graduate Student Instructor)** for **ESC101–Fundamentals of Computing** **(Fall 2014)**
  Faculty Instructor: Prof. Amey Karkare (IIT Kanpur)

Skill Set

- **Programming Languages** – C++, Python, C#, Lua
- **Web Development** – HTML, CSS, PHP, JavaScript
- **Other Tools** – Tensorflow, Torch, Shell Scripting, Matlab, SQL, Octave, LATEX

Positions of Responsibility and Extra Curricular Activities

- Coordinated the PhD Visit Day 2016 for Cornell Computer Science Department as the **Visit Day Czar** with other czars, department staff and volunteers. **(2016)**
- **Student Guide, Counselling Service, IIT Kanpur** **(2011–12)**
  Guided freshmen for a year to adjust to the campus environment.
- **Academic Mentor, Counselling Service, IIT Kanpur** **(2011–12)**
  Conducted remedial classes for subjects like Fundamentals of Computing & Mathematics-I,II
- **Link Student, Counselling Service, IIT Kanpur** **(2012–13)**

- **Member of Hall Executive Committee**, Hall 9, IIT Kanpur (2011–12)
- **Secretary, Hospitality Cell**, Techkriti 2011 (2011).