

# Ashudeep Singh

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## Education

- 2015-present **Ph.D. Computer Science**, *Cornell University*, Ithaca, NY.  
Advisor: Thorsten Joachims  
Relevant Courses: Machine Learning Theory, Design and Analysis of Algorithms, Advanced Machine Learning\*.  
Grade Point Average(GPA): 4.15
- 2010–2015 **B.Tech.-M.Tech. Dual Degree**, *Indian Institute of Technology Kanpur*, India.  
M.Tech. Cumulative Performance Index (CPI)– 10/10  
B.Tech. Cumulative Performance Index (CPI)– 9.6/10

## Awards and Achievements

- 2015 **Ranked first** in the M.Tech. batch of 108 students graduating in 2015.
- 2011,2012, 2013,2014 Awarded **Academic Excellence Award** for outstanding academic achievements at IIT Kanpur.
- 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.
- 2009 Placed in **State-wide Top 1%** in National Standard Examination in Physics (NSEP 2009) conducted by IAPT (Indian Association of Physics Teachers, Pune, India).

## Research Experiences

- August **Cornell University**, *Ithaca, NY*.
- 2015–present **Propensity score weighting for unbiased evaluation and learning in recommendation systems**  
Research project mentored by **Prof. Thorsten Joachims**(*Cornell University*)
- May–July **Cornell University**, *Ithaca, NY*.
- 2014 **Using Preference Data to embed documents in Metric spaces on arxiv.org click data using Logistic Markov Embedding** while correcting biases due to presentation and self-selection.  
Research Internship project mentored by **Prof. Thorsten Joachims**(*Cornell University*)
- May–July **Carnegie Mellon University**, *Pittsburgh, PA*.
- 2013 **Predicting Student Learning from conversational cues using computational methods in discourse analysis** [\[report\]](#)  
Research Internship mentored by **Prof. Carolyn P. Rosé** (*Language Technologies Institute, CMU*)
- Dec. 2012 **Internship Programme in Technology Supported Education, Winter School, Bangalore.**  
**Question Generation for Discussion Facilitation** [\[report\]](#)  
Research Internship mentored by **Prof. Carolyn P. Rosé** (*Language Technologies Institute, CMU*)

May–July 2012 **Summer Undergraduate Research Grant for Excellence (SURGE), IIT Kanpur.**  
**Logic Studio: Automatic Problem Generation in Propositional Logic** [report]  
*Research Project Mentored by Dr. Sumit Gulwani (Microsoft Research, Redmond).*

## Selected Projects

Jan–July 2015 **Convolutional Neural Networks learn to play chess.** [github][report]  
*Master's project under Prof. Amitabha Mukerjee*

Jan–Apr 2014 **Scene Recognition using mid-level CNN features.** [report]  
*Computer Vision Course Project under Prof. Vinay P. Namboodiri*

Sept–Nov 2013 **Recommendation System for *movielens* dataset.** [report]  
*ML Tools and Techniques Course Project under Prof. Harish Karnick*

Sept–Nov 2013 **A semantic approach to text summarization.** [paper][github]  
*Independent Undergraduate Research Project under Prof. Harish Karnick*

Sept–Nov 2013 **Student Response Analysis using Textual Entailment.** [report][github]  
*Natural Language Processing Course Project under Prof. Amitabha Mukerjee*

Feb–Apr 2013 **Motion Tracking using Occlusion States.** [report]  
*Artificial Intelligence Course Project under Prof. Amitabha Mukerjee*

Visit [ashudeepsingh.com/projects.html](http://ashudeepsingh.com/projects.html) for a full list of projects and term-papers.

## Teaching

- **Teaching Assistant for Machine Learning (CS4780 at Cornell University)** (Fall 2015)  
Faculty Instructor: Prof. Kilian Q. Weinberger
- **Tutor for ESC101–Fundamentals of Computing (IIT Kanpur)** (Fall 2014)  
Faculty Instructor: Prof. Amey Karkare
  - Organized weekly tutorials and problem-solving sessions and assisted the Faculty Instructor in designing the course content as well as problems for labs and exams.
- **Teaching Assistant for CS679–Machine Learning for Vision (IIT Kanpur)** (Spring 2015)  
Faculty Instructor: Prof. Vinay P. Namboodiri

## Relevant Courses Taken

**ML and AI** Machine Learning, Mathematics for Machine Learning, Natural Language Processing, Computer Vision and Image Processing, Artificial Intelligence

**CS Theory** Data Structures and Algorithms, Advanced Algorithms, Discrete Mathematics, Theory of Computation, Computational Complexity, Algorithmic Information Theory, Special Topics in Data Compression.

**Mathematics** Probability and Statistics, Linear Algebra, Real Analysis, Complex Algebra, Differential Equations, Mathematical Logic.

**Systems** Operating Systems, Computer Networks, Principles of Programming Languages, Compiler Design, Database Management Systems, Programming Tools and Techniques.

These are the courses I took as a student at IIT Kanpur. Complete list of courses at [ashudeepsingh.com/courses.html](http://ashudeepsingh.com/courses.html).

## Skill Set

- **Programming Languages** – Python, C, C++, Java, C#, R
- **Web Development** – HTML, CSS, PHP, JavaScript
- **Other Tools** – Matlab, SQL, Octave,  $\text{\LaTeX}$ , Visual Studio, Git, Weka, Numpy, Scipy, Theano, Caffe.