Happy Mittal

PhD Scholar
Dept. of Computer Science and Engineering
Indian Institute of Technology Delhi
Hauz Khas, New Delhi, India 110016

Phone: 08826859252
Email: happy.mittal@cse.iitd.ac.in
Web: `www.cse.iitd.ac.in/~mittal`

Education

Year	Degree	Institute	GPA/Marks
2013 - Present	PhD	Indian Institute of Technology Delhi	9.43/10
2011 - 2013	M.Tech	Indian Institute of Technology Delhi	8.35/10
2007 - 2011	B.Tech	YMCA Institute of Engineering, Faridabad	9.35/10
2007	12th (CBSE)	St. Michael's Sr. Sec. School	91.2%
2005	10th (CBSE)	St. Michael's Sr. Sec. School	92.2%

Research Interests

My primary research area is efficient Modelling, Learning and Inference in Statistical Relational Models. These models can be used to solve various problems in ML and AI in which there is an inherent symmetry among the objects (like friends on social networking sites). One such popular model is Markov Logic, in which structure is given by first order relation among the objects.

Publications

- H. Mittal, A. Bhardwaj, V. Gogate, and P. Singla. Domain-size Aware Markov Logic Networks. In *Proc. of AISTATS-19*, volume 89, pages 3216–3224, Okinawa, Japan, 2019. PMLR
- V. Sharma, N. A. Sheikh, H. Mittal, V. Gogate, and P. Singla. Lifted Marginal Map Inference. In *Proc. of UAI-18*, pages 917–926, Monterey, California, USA, 2018
- H. Mittal, S. S. Singh, V. Gogate, and P. Singla. Fine Grained Weight Learning in Markov Logic Networks. In *Proc. of IJCAI-16 Wkshp. on Statistical Relational AI*, New York, USA, 2016
- H. Mittal, A. Mahajan, V. Gogate, and P. Singla. Lifted inference rules with constraints. In *Proc. of NIPS-15*, pages 3519–3527, Montreal, Canada, 2015
- H. Mittal, P. Goyal, V. Gogate, and P. Singla. New rules for domain independent lifted MAP inference. In *Proc. of NIPS-14*, pages 649–657, Montreal, Canada, 2014
- M. Gupta, H. Mittal, P. Singla, and A. Bagchi. Analysis and characterization of comparison shopping behavior in the mobile handset domain. *Electronic Commerce Research*, 17(3):521–551, 2017
- Mona Gupta, Happy Mittal, Parag Singla, and Amitabha Bagchi. Characterizing comparison shopping behavior: A case study. In *2014 IEEE 30th International Conference on Data Engineering Workshops*, pages 115–122, Chicago, USA, 2014. IEEE

Work Experience

- **Internship at Dortmund University, Dortmund, Germany** **Sep 2016 - Dec 2016**
  Worked with Dr. Kristian Kersting and a PhD Candidate Alejendro Molina on using Sum Product Networks (SPNs) as a classifier layer in Deep Neural Networks. We were able to show a one-one correspondence between SPNs and traditional softmax classifiers.

- **Teaching Assistantship at IIT Delhi, Delhi** **July 2011 - May 2017**
  Machine Learning, Natural Language Processing, Learning Probabilistic Graphical Models, Artificial Intelligence, Introduction to Computer Science.

- **Internship at Samsung R&D Institute India, Noida** **Jan 2011 - May 2011**
  Created DOM based XML parser to automatically get the ICMP and SMTP ports of various mail servers.

Invited talks and presentations

- Invited talk at TCS Innovation Lab TRDDC, Pune, Nov 2015.
- Invited student talk at Second ACM IKDD Conference on Data Sciences, Bangalore, Mar 2015.
- Invited talk at TCS Research Labs, Gurgaon, Nov 2014.
- Poster presentation at First ACM IKDD Conference on Data Sciences, Delhi, Mar 2014.

Academic Achievements

- Best Teaching Assistant award for the course "Introduction to Computer Science" at IIT Delhi. **2017**
- Awarded Tata Consultancy Services PhD Fellowship for duration of 4 years. **2013**
- In GATE, secured all India rank of 237 among approximately 130,000 students. **2011**
- ACM International Collegiate Programming Contest : Certificate of achievement for participating in the ACM-ICPC Preliminary Online Contest. **2011**
- Secured First Position in Gurgaon Talent Search Examination (GTSE). **2007**
- Secured First Position in Maths competition organised by R.C. Gupta Memorial Trust. **2006,2007**

Thesis Projects

- **Characterizing Comparison Shopping Behavior: A Case Study** **July '11 - May '13**
  (M.Tech Major Thesis) Characterized user behavior on a mobile comparison website http://smartprix.com. The characterization is geared towards getting insight into the user behaviour enabling vendors offer the right kinds of products and prices, customizing the search based on user preferences, and reliably predicting the future behaviour of users.

- **DOM Based XML Parser (B.Tech Major Thesis)** **Jan '11 - May '11**
  Created DOM based XML parser to automatically get the ICMP and SMTP ports of various mail servers.

- **C++ interpreter in C++ (B.Tech Minor Thesis)** **July '10 - Dec '10**
  Created a simple C++ interpreter in C++. Lexical analysis and parsing were done without using standard tools like Lex or yacc. The parser was written using table driven parsing technique. The resulting interpreter had lot of C++ features like classes, standard I/O, operator overloading etc.

Technical skills

- **Programming Languages:** Python, C, C++, Java, Python, SQL, Matlab and SML.
- **Libraries & Frameworks:** PyTorch, Tensorflow, OpenGL, NLTK and SciPy.

References

- **Parag Singla**
  Department of Computer Science & Engineering,
  Indian Institute of Technology, Hauz Khas, New Delhi.
  parags@cse.iitd.ac.in
- **Vibhav Gogate**
  Department of Computer Science,
  The University of Texas at Dallas, Texas.
  vgogate@hlt.utdallas.edu
- **Amitabha Bagchi**
  Department of Computer Science & Engineering,
  Indian Institute of Technology, Hauz Khas, New Delhi.
  bagchi@cse.iitd.ac.in