

Shashank Srivastava

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Interests

Statistical learning: Kernel methods, optimization, graphical models, reinforcement learning
NLP: Structured prediction, language evolution, compositional semantics

Education

Masters, Language Technology Institute, Carnegie Mellon University July 2014 (Expected)
GPA: 4.22/4.00, Rank:1
Advisor: Dr. Eduard Hovy

BTech-MTech Dual degree, Computer Science and Engineering July 2011
Indian Institute of Technology (IIT) Kanpur, India
Advisor: Dr. Harish Karnick

Standardized tests: GRE : 1600/1600 Toefl IBT: 113/120

Employment

Graduate Research Assistant August 2012-present
Advisor: Dr. Eduard Hovy, Carnegie Mellon University

- Design of generic walk-based tree-kernels for NLP
- Joint resolution of temporal and coreference relations as optimization constraints
- Semantic composition with distributional tensor representations

High Frequency Trading July 2010 - June 2012
Tower Research Capital LLC (www.tower-research.com)

- Design of algorithms and strategies for high frequency trading (HFT) and statistical arbitrage
- Independent work: framework for online adaptive prediction models using stochastic gradient methods, learning optimal loss functions, hyperparameter estimation from market volatility

Summer Research Internship May - July 2009

Reinforcement Learning based Autoquider for Astrophotography

Advisors: Dr. Bernhard Scholkopf, Dr. Jan Peters, Max Planck Institute Tubingen

- Designed a two variable Q-learning algorithm with a continuous MDP formulation for auto-guiding a Mach GTO German Equatorial Mount for star-tracking and astrophotography

Graduate Teaching Assistant

- 'Data Structures and Algorithms', IIT Kanpur Spring, 2009
- 'Machine Learning and Knowledge discovery', IIT Kanpur Fall, 2010

Publications

- S Srivastava, and E Hovy. 'Vector-space Semantics with Frequency-driven motifs'. Proceedings of ACL 2014
- S Srivastava, D Hovy, E Hovy. 'Walk-based Tree Kernels Over Distributed Word Representations'. Proceedings of EMNLP 2013.
- M Sachan, A Dubey, S Srivastava, E P Xing and E Hovy. Spatial Compactness meets Topical Consistency: Jointly modeling Links and Content for Community Detection. WSDM 2014
- K Goyal*, S K Jauhar*, S Srivastava*, M Sachan*, H Li* and E Hovy. 'A Structured Distributional Semantic Model for Event Coreference' . Proceedings of ACL 2013 (**Equally contributing*)
- S Chaturvedi, H Daume , T Moon, S Srivastava, 'A Topical Graph Kernel for Link Prediction', Workshop on Mining and Learning with Graphs (MLG), ICML 2012

- D Hovy, S Srivastava, S K Jauhar, M Sachan, K Goyal, H Li and E Hovy. Identifying Metaphorical Word Use with Tree Kernels. Proceedings of Meta4NLP Workshop, NAACL-HLT 2013
- K Goyal*, S K Jauhar*, H Li*, M Sachan*, S Srivastava* and E Hovy. ‘A Structured distributional semantic model: Integrating structure with semantics’. Workshop on Continuous Vector Space Models and their Compositionality, ACL 2013 (**Equally contributing*)
- M Sachan and S Srivastava. ‘Collective Matrix Factorization for Co-clustering’. Proceedings of 22nd World Wide Web Conference(WWW) 2013 (poster).
- S Srivastava, ‘Evolution of Compositional Languages in Multiple Agent Social Communities’, MTech Thesis, IIT Kanpur, Sep 2010
- S Srivastava, M Hirsch, J Peters, B Scholkopf, ‘A Reinforcement learning based Autoguided for Astrophotography’, MPI Technical Report, MPI Tuebingen 2009
- S Srivastava, S Chaturvedi, A Bhattacharya. ‘A GO based representation for prognosis and inference from microarray data’, at Asia Pacific Bioinformatics Conference, APBC 2010 (poster)

Working submissions:

- S Srivastava and H Karnick. ‘Social topology governs Multi-agent language games’. (Under preparation)

Relevant courses

Intermediate statistics	Algorithms in NLP	Advanced graph algorithms
Statistical machine learning	Structured prediction	Parallel algorithms
Probabilistic Graphical Models	Optimization(audit)	Knowledge Discovery
Machine learning	Algorithms in Bioinformatics	Indexing and Search
Information retrieval*	Reinforcement learning*	Randomized algorithms*

(* currently registered)

Awards and Honors

- Thrice awarded ‘Academic Excellence award’ by the Indian Institute of Technology Kanpur for distinctive academic performance (top 5% of class) (2005-06, 2007-08 and 2008-09)
- Two Gold medals for highest Marks in India in the International Assessment for Schools by University of New South Wales, Australia (in both Maths and Science)
- All India Rank 11 in the Second National Science Olympiad, 2001
- Awardee of National Talent Search (NTS) Scholarship by National Council of Educational Research and Training
- Twice awarded medals for proficiency in Maths in National Talent Search Competitions
- Awarded scholarship by state Council of Science and Technology for highest marks in Science in school leaving exam
- Selected for and sponsored to attend ‘Microsoft Winter School on Machine Learning and Computer Vision’, IISc Bangalore, January 2010
- Top 0.1% in the Joint Entrance Exam to the IITs, 2005 (200,000 appearing students)
- Top 0.1% in the Combined Admission Test of the IIMs, 2011 (200,000 appearing students)

Teaching Experience

- Head Coordinator*, Summer school for Computer Literacy for rural children May-Jul 2008
- Initiated and synchronized practical computer training through 8 secondary tutors
- Senior Link Student*, Counselling Service, IIT Kanpur 2007-08
- Assisted all 5 allotted counselees (highest) to recover from academic probation

Extra-curricular

- Program committee member, Mid-Atlantic Student Colloquium on Speech, Language and Learning (MASC), 2013
- Member of College basketball team for four years
- Avid Taekwondo enthusiast, silver medal in District Junior championships
- Awarded thrice at school for proficiency in languages