Shashank Srivastava

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Research Interests

Conversational Learning; Natural Language Understanding.

Education

Carnegie Mellon University
2018 PhD in Machine Learning,
Thesis: Teaching Machines to Classify from Natural Language Interactions
Advisor: Tom Mitchell

Carnegie Mellon University
2014 MS in Language Technologies,
Advisor: Eduard Hovy

Indian Institute of Technology Kanpur
2010 BTech-MTech Dual degree, Computer Science and Engineering

Employment

AI Resident, Microsoft Research, Redmond — Oct 2018-

Research Assistant, School of Computer Science, CMU — Sept 2012-Sept 2018

Research Intern, Microsoft Research, Redmond — May 2016- July 2016
Mentor: Nebojsa Jojic

Algorithmic Trader, Tower Research Capital LLC — July 2010 - June 2012

Research Intern, Max Planck Institute Tubingen — May 2009- July 2009
Mentors: Bernhard Schölkopf, Jan Peters

Awards & honors

- Microsoft AI Residency 2018 (10/ 2000 applicants)
- Awarded Yahoo InMind Fellowship for 2016-17
- Invited to Heidelberg Laureate Forum 2016
- Highest GPA in the class of 2014 at LTI, CMU

- Three Academic Excellence awards by IIT Kanpur (top 7% of class), 2006, 2008 and 2010
- Highest score in India in the International Assessment for Schools by University of New South Wales (*two* gold medals; in Maths and Science)
- Travel award for Microsoft Winter School on Machine Learning, 2010
- National Talent Search Scholarship by Government of India
- Top 0.1% in the Combined Admission Test of the IIMs, 2011 (200,000 students)
- Top 0.1% in the Joint Entrance Exam of the IITs, 2005 (200,000 students)

Publications

In submission/preparation:

- A Azaria, S Srivastava, J Krishnamurthy, I Labutov, T Mitchell. 'An Agent for Learning and Executing Natural Language Commands'. (In review at JAAMAS)
- S Srivastava, I Labutov, T Mitchell. 'Learning question-asking strategies for mixed-initiative dialog'

Conferences

1. S Srivastava, N Jojic. 'A Spatial Model for Extracting and Visualizing Latent Discourse Structure in Text'. ACL 2018
2. S Srivastava, I Labutov, T Mitchell. 'Zero-shot Learning of Classifiers from Natural Language Quantification'. ACL 2018
3. I Labutov, S Srivastava, T Mitchell. 'LIA: A natural language programmable personal assistant'. System Demonstrations. EMNLP 2018
4. S Chaturvedi, S Srivastava, D Roth. 'Where have I heard this story before? : Identifying Narrative Similarity in Movie Remakes'. NAACL 2018 *(short paper)*
5. S Srivastava, I Labutov, T Mitchell. 'Joint Semantic Parsing and Concept Learning from Natural Language Explanations'. EMNLP 2017
6. S Srivastava, A Azaria, T Mitchell. 'Parsing Natural Language Conversations using Contextual Cues'. IJCAI 2017
7. S Srivastava, S Chaturvedi, T Mitchell. 'Inferring interpersonal relationships in narrative text'. AAAI 2016.
8. S Chaturvedi, S Srivastava, H Daumé and C Dyer. 'Modeling Evolving Relationships Between Characters in Literary Novels'. AAAI 2016.
9. B Yang, N Nakashole, B Kisiel, EA Platanios, A Saparov, S Srivastava, D Wijaya, T Mitchell, 'CMU-ML Micro-Reader System for KBP 2016 Cold Start Slot Filling, Event Nugget Detection, and Event Argument Linking', TAC 2016

10. B Kisiel, B McDowell, M Gardner, N Nakashole, EA Platanios, A Saparov, S Srivastava, D Wijaya, T Mitchell, 'CMU-ML system for KBP 2015 Cold Start Slot Filling', TAC 2015

11. S Srivastava, E Hovy. 'Vector Space Semantics with Frequency-driven motifs'. ACL 2014

12. 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

13. S Srivastava, D Hovy, E Hovy. 'A Walk-based Semantically Enriched Tree Kernel Over Distributed Word Representations'. EMNLP 2013 *(short paper)*

14. M Sachan and S Srivastava. 'Collective Matrix Factorization for Co-clustering'. WWW companion 2013

15. K Goyal*, SK Jauhar*, H Li*, M Sachan*, S Srivastava* and E Hovy. 'A Structured Distributional Semantic Model for Event Coreference'. ACL 2013 *(*Equally contributing) (short paper)*

Workshop papers and Technical Reports

16. S Srivastava. 'Teaching Machines to Classify from Natural Language Interactions'. PhD Thesis. School of Computer Science, CMU, 2018

17. S Srivastava, I Labutov, T Mitchell. 'Learning Classifiers from Declarative Language'. Workshop on Learning from Limited Data, NIPS 2017

18. 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

19. 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)*

20. S Chaturvedi, H Daumé , T Moon, S Srivastava, 'A Topical Graph Kernel for Link Prediction', Workshop on Mining and Learning with Graphs, ICML 2012

21. S Srivastava, 'Evolution of Compositional Languages in Multiple Agent Social Communities', MTech Thesis, IIT Kanpur, 2010

22. S Srivastava, M Hirsch, J Peters, B Scholkopf, 'A Reinforcement learning based Autoguider for Astrophotography', MPI Technical Report, 2009

Media Coverage: New Scientist (Dec 2015), GeekWire (Feb 2018).

Invited Talks

- 'Learning Classifiers from Language'
  Stanford NLP Seminar, Oct 2018
  Computational Linguistics and Lunch Symposium, UPenn, Nov 2017
  Google Research, April 2018
- 'Jointly Learning Concepts and Language'
  IIT Kanpur, June 2017
- 'Interpreting Language from Context'
  Machine Learning Lunch Seminar, CMU, May 2017
  CogComp Group, UIUC, Nov 2016
- 'Semantically Enriched Tree Kernels Over Distributed Word Representations'
  LTI Student Research Symposium, August 2013
- 'Algorithms for Graph clustering'
  Special Interest Group in Machine Learning Seminar, IIT Kanpur, Sep 2009

Teaching

As Instructor:
Applied Machine Learning Workshop, GITS Udaipur, 2011 Level: Advanced Undergrad
Summer School for Computer Literacy, IIT Kanpur, 2008 Level: High School

Guest Lectures:
'Parsing Language to Programs' in *Conversational Machine Learning*, CMU, 2018
'Bias-Variance Tradeoff' in *Machine Learning and Data Mining*, UC Santa Cruz, 2018
'CKY and Earley Parsing' in *Semantics for NLP*, CMU, 2014
'Knowledge Representation and Inference in Ontologies', in *Semantics for NLP*, CMU, 2014
'Named Entity Recognition' in *Natural Language Processing*, IIT Kanpur, 2010

As Teaching Assistant:
Convex Optimization, CMU, 2016
Statistical Machine Learning, CMU, 2015
Machine Learning and Knowledge Representation, IIT Kanpur, 2010
Algorithms and Data Structures, IIT Kanpur, 2009

Service and Outreach

- Co-organizer of Learning by Instruction Workshop at NIPS 2018
- PhD Admissions Committee, Machine Learning Department, CMU (2016-17 and 2017-18)
- Program committee/Reviewer for ACL, EMNLP, NAACL, AAAI, NIPS, ICML, CoNLL
- Organized and Instructed 10-week long Summer School for Computer Literacy for 20 socially disadvantaged young adults at IIT Kanpur in 2008
- Program Committee, Mid-Atlantic Student Colloquium on Language and Learning, 2013
- Conducted practical workshop on Machine Learning for 40 senior year computer science students at Geetanjali Institute of Technology and Science, Udaipur in 2010
- Senior Link Student, Counselling Service, IIT Kanpur, 2006-08