

Vivek Gupta

Machine Learning & Natural Language Processing

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RESEARCH INTERESTS	Natural Language Inference, Representation Learning, Extreme Multi-Label Learning, Ethics in Artificial Intelligence	
CURRENT POSITION	School of Computing, University of Utah <i>Graduate Research Assistant</i> Advisors: Prof. Vivek Srikumar & Prof. Suresh Venkatasubramanian	Aug 2018 - Present
EDUCATION	School of Computing, University of Utah PhD, Computer Science, School of Computing Advisors: Prof. Vivek Srikumar & Prof. Suresh Venkatasubramanian (CGPA: 3.8/4) Indian Institute of Technology, Kanpur M. Tech, Computer Science and Engineering Advisor: Prof. Harish Karnick (CGPA: 9.3/10) Indian Institute of Technology, Kanpur B. Tech, Computer Science and Engineering (CGPA: 7.5/10)	Aug 2018 - Present July 2015 - May 2016 July 2011 - July 2015
EMPLOYMENT	Microsoft Research Lab, India <i>Research Fellow, Machine Learning and Natural Language Application</i> Dr. Praneeth Netrapalli & Dr. Prateek Jain	Oct 2016 - Aug 2018 Dr. Nagarajan Natarajan,
SCHOLASTIC ACHIEVEMENTS	Selected among the top 7 finalist in Ericson's Innovation Awards, India in 2016 Secured All India Rank 183 in IIT-JEE 2011 amongst more than 500,000 candidates Qualified for Kishore Vaigyanik Protsahan Yojana (KVPY) scholarship, 2011 Selected among top 1% of students, Indian National Physics Olympiads, 2011 Selected among top 1% of students, Indian National Chemistry Olympiads, 2011	
PUBLICATIONS	Gupta, V. , Nokhiz, P., Dutta, C., Venkatasubramanian, S., <i>Equalizing Recourse Across Group</i> , Under Review [PrePrint] Gupta, V. , Kumar, A., Nokhiz, P., Netrapalli, P., Rai, P., Talukdar, P., <i>P-SIF: Document Embeddings using Partition Averaging</i> , to appear at AAAI 2020 (Oral) [Paper] [Appendix] Li, T., Gupta, V. , Mehta, M., Srikumar, V., <i>A logic-Driven Framework for Consistency of Neural Models</i> , EMNLP-IJCNLP 2019 [Paper] [Poster] Gupta, V. , Wadbude, R., Natarajan, N., Karnick, H., Jain, P., Rai, P., <i>Distributional Semantics meet Multi-Label Learning</i> , AAAI 2019 (Oral) [Paper] [Slides] [Poster] Gupta, V. , Saw A., Gupta, H., Nokhiz, P., Talukdar, P., <i>Word Polysemy Aware Document Vector Estimation</i> , NAACL-SRW 2019 (non-archival) [PrePrint] Raunak, V., Gupta, V. , Metze, F., <i>Effective Dimensionality Reduction for Word Embeddings</i> , Repl4NLP 2019 [Paper] [Poster] Raunak, V., Kumar, V., Gupta, V. , Metze, F., <i>On Dimensional Linguistic Properties of the Word Embedding Space</i> , ACL-SRW 2019 (non-archival) [PrePrint] Dohare, S., Gupta, V. , Karnick, H., <i>Unsupervised Semantic Abstractive Summarization</i> , ACL-SRW 2018 [Paper] [Poster]	

	<p>Mekala, D., Gupta, V., Paranjape, B., Karnick, H. <i>Sparse Composite Document Vectors using soft clustering over distributional representations</i>, EMNLP 2017 (Oral) [Paper] [Slides]</p> <p>Gupta, V., Karnick, H., Bansal, A., Jhala, P. <i>Product Classification in E-Commerce using Distributional Semantics</i>, COLING 2016 (Master Thesis Work) [Paper] [Poster]</p> <p>Wadbude, R., Gupta, V., Mekala, D., Karnick, H., <i>User Bias Removal in Review Score Prediction</i>, CODS-COMAD 2018 & DAB 2017 (Oral) [Paper] [Poster]</p> <p>Gupta, V., Mittal, S., Bhaumik, S., Roy, R. <i>Assisting Humans to Achieve Optimal Sleep by Changing Ambient Temperature</i>, BIBM 2016, BHI 2016 & HI-DS 2016 (Oral) [Paper] [Slides]</p> <p>Mekala, Dheeraj., Gupta, V., Kar, P., Karnick, H., <i>Bayes-optimal Hierarchical Classification over Asymmetric Tree-Distance Loss</i>, Tech Report [PrePrint]</p> <p>Mahajan, D., Gupta, V., Keerthi, S., Sundararajan, S., <i>Efficient Estimation of Generalization Error and Bias-Variance Components of Ensembles</i>, Tech Report [PrePrint]</p>
MASTER THESIS	<p>Product Categorization in E-Commerce using Distributional Semantics <i>Prof. Harish Karnick (IIT Kanpur) & Pradhuman Jhala (Flipkart.com)</i> [Thesis] [Slides]</p> <ul style="list-style-type: none"> Proposed a novel distributional semantics representation for text documents. Proposed a two-level ensemble approach utilizing (with respect to the taxonomy tree) a path-wise, node-wise and depth-wise classifiers for product classification.
RESEARCH INTERNSHIPS	<p>IBM Research, Thomas J. Watson Research Center May 2019 - Aug 2019 Contrastive Explanations for Natural Language Task <i>Dr. Kush R Varshney (Research Manager)</i></p> <p>Microsoft Research India, Bangalore May 2016 - Jul 2016 Estimation of Generalization Error for Ensembles <i>Dr. Sundararajan Sellamanickam (Principal Applied Scientist)</i></p> <p>Flipkart Internet Pvt. Ltd., Bangalore May 2015 - July 2015 Web Scale Product Classification <i>Pradhuman Jhala (Principal Architect)</i></p> <p>Samsung R&D Institute, Bangalore May 2014 - July 2014 Mobile and Healthcare Solution Y2014 <i>Sandip Bhaumik (Group Manager) & Raj Roy (Manager)</i></p>
PROFESSIONAL SERVICES	<p>Program Committee: AAAI 2020, NAACL 2019, ACL-SRW 2019, ACL-SRW 2018, EMNLP 2017.</p> <p>Coordinator: Recently assigned as the Data Science Club Coordinator at the University of Utah.</p> <p>Coordinator: Initiated and managed Special Interest Group in Machine Learning at Computer Science and Engineering Department, IIT Kanpur. Organized regular meetups for discussions and talks on topics in Machine Learning and related fields.</p> <p>Teaching Assistant: for MLT 2016 - Machine Learning Tool and Technique: Mentored a group of 30 M-Tech students part of a course on Machine Learning. Set up a labeling software for project work, resulting in a new dataset.</p> <p>Student Secretary: in Promotion of Work Experience and Research PoWER & Alumni Contact Program (ACA) under Office of Dean of Research and Development, IIT Kanpur.</p> <p>Student Volunteer: for mentoring and teaching underprivileged students of primary classes from nearby village (Nankari) at Prayas, IIT Kanpur.</p>
SEMINARS	<p>I had the opportunity to present my work at various places which I thoroughly enjoyed. [Talks]</p>
MENTORSHIP	<p>I have been extremely lucky to mentor some amazing students while working at Microsoft. [Students]</p>
GRANTS	<p>I have been fortunate to receive scholarships/grants at several occasions to support my education and research. [Grants]</p>