Ashim Gupta

Contact Information

335 South 700 East,
Salt Lake City, UT 84102
United States of America

ashim95.github.io
ashimgupta95@gmail.com
Google Scholar
+1-385-500-7363

Research Interests

Distributional Robustness of NLP Models, Analysis and Explainability of Large Language Models, Low-resource Multi-lingual NLP, Automated Fact Checking, Sanskrit Computational Linguistics

Current Position

School of Computing, University of Utah

Graduate Research Assistant
Advisor: Prof. Vivek Srikumar — **Aug 2019 - Present**

Education

School of Computing, University of Utah

PhD, Computer Science (CGPA: 3.87/4)
Advisor: Prof. Vivek Srikumar — **Aug 2019 - Present**

Indian Institute of Technology - BHU

B.Tech, Electrical Engineering (CGPA: 8.27/10) — **Jul 2012 - May 2016**

Research Experience

Bloomberg AI

Research Intern — **May 2022 - Aug 2022**
Advisors : Alakananda Vempala, Yingjie Fei
Manager : Temma Choji

Bosch Research

Research Intern — **May 2021 - Aug 2021**
Advisors : Jun Araki

Computer Science Department, IIT - Kharagpur

Project Officer, NLP Researcher — **Jun 2017 - Mar 2019**
Advisors : Prof. Sudeshna Sarkar, Prof. Pawan Goyal

Engineering Experience

Proptiger.com, Gurgaon, India

Software Engineer (Grade 3) — **Aug 2016 - Apr 2017**

Teaching Experience

University of Utah

Teaching Mentee,
Introduction to Machine Learning — **Jan 2023 - May 2023**

Teaching Mentee,
Introduction to Machine Learning — **Aug 2020 - Dec 2020**

Publications

Gupta A., Blum C.W., Choji T., Fei Y., Shah S., Srikumar V., Vempala A. *Don't Retrain, Just Rewrite: Countering Adversarial Perturbations by Rewriting Text*, ACL, 2023

Gupta A., Srikumar V., *X-FACT: A New Benchmark Dataset for Multilingual Fact Checking*, ACL, 2021 [Paper]

Grespan M.M., **Gupta A.**, Srikumar V., *Evaluating Relaxations of Logic for Neural Networks: A Comprehensive Study*, IJCAI, 2021 [Paper]

Gupta A., Kvernadze G., Srikumar V., *BERT & Family Eat Word Salad: Experiments with Text Understanding*, 35th AAAI Conference on Artificial Intelligence, 2021 [Paper]

Krishna A., **Gupta A.**, Goyal P., Santra B., Satuluri P., *A Graph Based Framework for Structured Prediction Tasks in Sanskrit*, ACL - Computational Linguistics Journal (Accepted for December 2020 Issue) [Paper]

Krishna A., **Gupta A.**, Garasangi D., Satuluri P., Goyal P., *Keep It Surprisingly Simple: A Simple First Order Graph Based Parsing Model for Joint Morphosyntactic Parsing in Sanskrit*, EMNLP 2020 [Paper]

Gupta A., Krishna A., Goyal P., Hellwig O., *Evaluating Neural Morphological Taggers for Sanskrit*, SIGMORPHON - ACL 2020 [Paper]

Krishna A., **Gupta A.**, Garasangi D., Sandhan J., Satuluri P., Goyal P., *Neural Approaches for Data Driven Dependency Parsing in Sanskrit*, Technical Report [Preprint]

Gupta A., Goyal P., Sarkar S., *Fully Contextualized Biomedical Named Entity Recognition.* 41st European Conference on Information Retrieval(ECIR), 2019 [Paper]

Pramanick M, **Gupta A.**, Mitra P. *An LSTM-CRF Based Approach to Token-Level Metaphor Detection.* FigLang Workshop at NAACL, 2018 [Paper]

Singh VP., **Gupta A.**, Singh S., Srivastava R. *An Efficient Content Based Image Retrieval System for Normal and Abnormal Mammograms.* IEEE UPCON'15, IIIT Allahabad [Paper]

Selected Past Projects

Machine Translation for low-resource Indian languages (IIT Kgp): An unsupervised Phrase-based machine translation system with initial phrase table induction using a bilingual lexicon and iterative back-translation. Exploiting the use of an NMT initialized with synthetic data from PB-SMT. BLEU Score of 7.0. (FairSeq, PyTorch, Moses MT)

Multi-Task learning for Sanskrit morphological tagging and lemma prediction (IIT Kgp): A deep multi-task architecture for tagging different morphological categories and lemma prediction for a free word order language like Sanskrit. Our method yields state-of-the-art results among all the neural models. (PyTorch)

Medical Scientific Text Classification using Hierarchical Neural Networks (IIT Kgp, 2018): A Hierarchical Bi-directional LSTM based system with attention for classification of PubMed abstracts along with a modification of CRF to incorporate sequence tagging information. Results superior to state-of-the-art method by 0.4 % on RCT 20k, 200k datasets (Tensorflow)

Multi-Sensor Data Fusion Using Kalman Filter (IIT BHU, 2015-2016): A robust Kalman Filter algorithm to fuse data from a low-cost IMU with GPS in order to reduce the error in estimation of object position. (MATLAB)

Achievements and Awards

- Cleared the highly prestigious **IIT-JEE (2012)**, and was placed among the top 0.5% from about half a million students
- District and School topper in class 12th Board examination conducted by CBSE.
- Online Courses : Machine Learning by Stanford University, Introduction to Computer Vision by Georgia Tech., Introduction to Natural Language Processing by Stanford University.

Skill Set

- Programming Languages: Python (PyTorch, Tensorflow, FairSeq); Java; C++; MATLAB; CUDA (Basics)
- Technologies and Platforms: Linux, Git, MySql, Maven, Spring; Apache Solr, Redshift, LaTeX