

# Ashish Gupta

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## INTERESTS

Machine Learning, Natural Language Processing, Information Extraction, Information Retrieval, Recommender Systems, Reinforcement Learning

## EDUCATION

### M.Tech(CSE) with specialisation in Machine Learning

#### ■ IIIT Bangalore

Jul 2016 – Jul 2018

- Thesis: Neural Attention Reader for Video Comprehension
- Adviser: Prof. Manish Gupta
- Focus: Information Retrieval, Information Extraction, Videos, Attention Mechanism, Bidirectional LSTM, Distant Supervision, Differential Weighing

### B.Tech in CSE

#### ■ SRMCEM(Uttar Pradesh Technical University)

Aug 2008 – Jun 2012

- Deans List for 3 years.

## RELEVANT EXPERIENCE

### Microsoft

#### ■ Applied Scientist II

Apr 2021 – Present

- Working in Defensive Ranker team where we need to rank URLs/documents based on the nature of threat.
- Ran Interleaving flights, performed A/B testing, used multiple metrics to measure the performance.
- Developed multi-lingual neural models for Defensive Search team where we work on specific threats like coronavirus, black lives matter, anti-semitic, suicide, etc to suppress URLs based on their nature.
- Worked in creation of Universal metric measurement set and used multiple Bayesian sampling methods for scaling across different languages and regions

### Walmart Global Tech

#### ■ Data Scientist

Aug 2019 – Apr 2021

- Worked in Catalog Data Science team.
- Built deep learning models for attribute extraction from text.
- Developed a Smart normalization tool to match the non-standard/junk text present in the catalog to the standard text.
- Developed BERT based models for classification and sequence labeling in Multi-lingual models. These models are further used in product search.
- Lead an initiative to build an autotagger tool for reducing the amount of tagged data and build efficient models with limited data.
- Worked on jointly leveraging strong supervision data along with weak supervision data to train neural models.
- Lead an initiative on discovering high-quality entities/attributes from Walmart product reviews. This will help to enrich the catalog in a more fine-grained manner.

#### ■ Senior Statistical Analyst

Jul 2018 – Jul 2019

- Worked on retail graph for home and furniture section, which includes entity extraction, style prediction. Built models which helped in substitute and complementary products recommendation.

### VideoKen Software Pvt. Ltd, IIIT Bangalore Innovation Centre

#### ■ Visiting Researcher

Jan 2018 – Jun 2018

- Worked on neural multi-task reader for Video Comprehension. Used Attention Mechanism, Bidirectional LSTM, self-attention and did meaningful bifurcations of the raw text to complete the task.

### Tata Consultancy Services

#### ■ Data(Systems) Engineer

Nov 2012 – Jun 2016

- Worked in Oracle apps (an ERP tool) as an OTR consultant. Worked in GE Healthcare projects.
- Worked in SCM(Supply Chain Management), Purchase Order and Order Management modules of Oracle apps.

## PUBLICATIONS

#### ■ User, Item Fairness & Diversity in Online Marketplaces

- In review: Ashish Gupta in CIKM 2022.

#### ■ Learning with Limited Labels via Momentum Damped Differentially Weighted Training

- Rishabh Mehrotra, Ashish Gupta in KDD 2020.

#### ■ Joint Attention Neural Model for Demand Prediction in Online Marketplaces

- Ashish Gupta, Rishabh Mehrotra in NLDL 2020.

	<ul style="list-style-type: none"> <li>▪ <b>Hyper-parameter optimization with REINFORCE and Masked Attention Auto-regressive Density Estimators</b> <ul style="list-style-type: none"> <li>• Chepuri Shri Krishna, Ashish Gupta, Swarnim Narayan, Himanshu Rai, and Diksha Manchanda got accepted in IEEE BigData 2020.</li> </ul> </li> <li>▪ <b>Ultron-AutoML: an open-source, distributed, scalable framework for efficient hyper-parameter optimization</b> <ul style="list-style-type: none"> <li>• Swarnim Narayan, Chepuri Krishna, Varun Mishra, Abhinav Rai, Himanshu Rai, Chandrakant Bharti, Gursirat Singh, Ashish Gupta, and Nitinbalaji Singh in IEEE BigData 2020.</li> </ul> </li> <li>▪ <b>Sequence-aware Reinforcement Learning over Knowledge Graphs</b> <ul style="list-style-type: none"> <li>• Ashish Gupta, Rishabh Mehrotra in RecSys REVEAL 2019.</li> </ul> </li> <li>▪ <b>Neural Attention Reader for Video Comprehension</b> <ul style="list-style-type: none"> <li>• Ashish Gupta, Rishabh Mehrotra, Manish Gupta in KDD Deep Learning Day 2018.</li> </ul> </li> </ul>
PATENTS	<ul style="list-style-type: none"> <li>▪ <b>Ultron-AutoMLv2: a distributed framework for efficient hyper-parameter optimization (HPO) of ML models</b> <ul style="list-style-type: none"> <li>• Chepurishri Krishna, Amit Agarwal, Ashish Gupta, Swarnim Narayan, Himanshu Rai, Varun Mishra, Abhinav Rai, Chandrakant Bharti, Gursirat Singh and Nitinraj Balajisingh</li> </ul> </li> </ul>
BLOGS	<ul style="list-style-type: none"> <li>▪ <b>An Introduction to Meta-Learning</b></li> <li>▪ <b>Introduction to Reinforcement Learning</b></li> </ul>
PROJECTS	<p><b>Deep Recurrent Generative Decoder for Abstractive Text Summarization (EMNLP 2017)</b> Sequence to sequence oriented encoder decoder model with attention mechanism and variational auto encoders.</p> <ul style="list-style-type: none"> <li>▪ Novel approach to text summarization with GRU and attention mechanism. Oct 2019 – Dec 2019</li> </ul> <p><b>Hierarchical Attention Networks for Document Classification</b> Implementation of Hierarchical Attention Networks paper NAACL 2016.</p> <ul style="list-style-type: none"> <li>▪ Movie reviews from IMDB dataset are used for prediction. Mar 2018 – Mar 2018</li> </ul> <p><b>Image-based recommendations on Styles and Substitutes,</b> Guide:- Prof. Dinesh Babu Jayagopi</p> <ul style="list-style-type: none"> <li>▪ Recommending apparels to users based on their choice and the complementary products.This work was done on a subset of Amazon dataset. <b>Click here</b> to checkout the video. Mar 2017 – May 2017</li> </ul>
ACHIEVEMENTS / CO-CURRICULAR ACTIVITIES	<ul style="list-style-type: none"> <li>▪ Top 12%(Placed 30 out of 252 teams) in KDD 2019   Policy Learning for Malaria Control - Maximize rewards for malaria prevention sequential decision making task.</li> <li>▪ Top 20%(Placed 303 out of 1571 teams) in Google QUEST Q&amp;A Labeling - Improving automated understanding of complex question answer content.</li> <li>▪ Top 3%(Placed 94 out of 4037 teams) in Quora Insincere Question Classification - To identify and flag insincere questions in Quora.</li> <li>▪ Top 1.4%(Placed 28 out of 2000 teams) in Microsoft AI India Challenge 2018 - Ranking passage according to relevance containing answer to a given question.</li> <li>▪ Achieved AIR 56 in ISRO Scientist/SC exam(July'16).</li> <li>▪ Qualified GATE'16 with 98.8 percentile(Feb'16).</li> </ul>
PROFESSIONAL AFFILIATIONS & ACTIVITIES	<p>Reviewer of Knowledge Discovery and Data Mining(KDD 2021) 2021</p> <p>Reviewer of Association for Computational Linguistics(ACL 2020) 2020</p> <p>Natural Language Processing with Attention Models(Coursera) 2020 – Present</p> <p>SIGIR Conference on Research and Development in Information Retrieval(SIGIR 2019) 2019</p> <p>Reviewer of IR Journal: Learning from User Interactions 2019</p> <p>Association for Computing Machinery 2017 – Present</p>
SKILLS	<ul style="list-style-type: none"> <li>▪ <b>AI/ML:</b> Tensorflow, PyTorch, Keras, NLTK, scikit-learn, spaCy</li> <li>▪ <b>Optimization:</b> CVXPY</li> <li>▪ <b>Programming Languages:</b> C, Java, Python</li> <li>▪ <b>IDEs:</b> Pycharm, Google Colab, AWS, Eclipse</li> <li>▪ <b>Database:</b> Hive, MySQL, MongoDB, MS SQL Server</li> </ul>