Shashank Gupta

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RESEARCH INTERESTS

Information retrieval, Machine learning, Causal inference.

EDUCATION

University of Amsterdam (UvA)
PhD, ML and IR, April 2021 - Current
Advisors: Dr. Maarten de Rijke, UvA
Dr. Harrie Oosterhuis, Radboud University
Research Group: **The Information Retrieval Lab (IRLab).**

International Institute of Information Technology (IIIT), Hyderabad
Master of Science By Research, Computer Science and Engineering, June 2015 - Dec'17
Advisors: Dr. Vasudeva Varma, Dean R&D, IIIT-Hyderabad
Dr. Manish Gupta, Principal Applied Scientist, Microsoft, Hyderabad
Research Group: **Information Retrieval and Extraction Laboratory (IREL).**

Birla Institute of Technology, Mesra, India
Bachelor Of Technology, Computer Science and Engineering, June 2010 - June 2014.

PROFESSIONAL ACTIVITIES

Reviewer: SIGIR'23, NeurIPS(20-23), ICML(20-23), ICLR(21-23), ACL-RR(21), AAAI'21, EMNLP(20-21), ECIR(19-21), CIKM'21, ACL'21, IJCNLP'20, ML4H@NIPS.
Teaching Assistant: Advanced Information Retrieval, UvA (2022), Information Retrieval and Extraction, IIIT-H (2018), Machine Learning, IIIT-Hyderabad (2017), Machine Learning, BITS-Pilani (2015).

RELEVANT EXPERIENCE

Meta AI, London, UK
Research Scientist Intern, Modern Recommender Systems Team, Aug 2023 - Dec 2023
Mentor: Zilong Tan.
Working on practical and safe off-policy learning for two-stage recommender system, and on mixture of experts network for recommender system.

Flipkart, Bangalore, India
Data Scientist, Search Ranking Team, July 2018 - Jan 2021
Mentor: Mohit Kumar.
Worked on learning to rank methods for personalized search. Worked with terabyte scale log data using PySpark and Tensorflow. Also worked on the problem of session length prediction for user's incoming search session to help disambiguate their explore v/s purchase intent (SIGIR'20).

Conduent Labs (erstwhile Xerox Research (XRCI)), Bangalore, India
Research Internship, Jan 2018 - May 2018
Mentors: Manjira Sinha & Sandya Mannarswamy
Worked on the problem of fake news detection. Proposed a novel Coupled Matrix-Tensor Factorization (CMTF) based solution for the probblem (ASONAM'18).

Tata Research, Design and Development Center, Pune, India
Research Internship, May 2017 - July 2017
Mentors: Girish Palshikar, Sachin Pawar & Nitin Ramrakhiyani
Worked on semi-supervised and multi-task learning based methods for Adverse Drug Reaction (ADR) mention extraction from social media posts (ECIR'18, CIKM'17 and NeurIPS'17 workshop).

JOURNAL PUBLICATIONS

Semi-Supervised Recurrent Neural Network for Adverse Drug Reaction Mention Extraction
Shashank Gupta, Sachin Pawar, Nitin Ramrakhiyani, Girish Keshav Palshikar, Vasudeva Varma
BMC Bioinformatics Special Issue, presented at CIKM 2017.

TUTORIALS

Recent Advances in the Foundations and Applications of Unbiased Learning to Rank
Shashank Gupta, Philipp Hager, Jin Huang, Ali Vardasbi, and Harrie Oosterhuis.
SIGIR 2023.

Recent Advancements in Unbiased Learning to Rank
Shashank Gupta, Philipp Hager, and Harrie Oosterhuis.
FIRE 2023.

UNDER REVIEW

Practical and Robust Safety Guarantees for Advanced Counterfactual Learning-to-Rank
Shashank Gupta, Harrie Oosterhuis, and Maarten de Rijke .

CONFERENCE PUBLICATIONS

Safe Deployment for Counterfactual Learning to Rank with Exposure-Based Risk Minimization
Shashank Gupta, Harrie Oosterhuis, and Maarten de Rijke
SIGIR 2023 (**Full paper**), CONSEQUENCES at RecSys 2023.

A Deep Generative Recommendation Method for Unbiased Learning From Implicit Feedback
Shashank Gupta, Harrie Oosterhuis, and Maarten de Rijke
ICTIR 2023, CONSEQUENCES+REVEAL at RecSys 2022.

A First Look at Selection Bias in Preference Elicitation for Recommendation
Shashank Gupta, Harrie Oosterhuis, and Maarten de Rijke
CONSEQUENCES at RecSys 2023.

Neural Bag-of-Words Point Process Model for User Return Time Prediction in E-commerce
Shashank Gupta, Manish Bansal
CRUM Workshop at UMAP 2023.

The University of Amsterdam at the TREC 2021 Fair Ranking Track
Ali Vardasbi, Gabriel Bndict, Shashank Gupta, Maria Heuss, Pooya Khandel, Ming Li, Fatemeh Sarvi
TREC Fair Ranking Trec 21.

Predicting Session Length for Product Search on E-commerce Platform
Shashank Gupta, Subhadeep Maji
SIGIR 2020, Short.

On Application of Bayesian Parametric and Non-parametric Models for User Cohorting in Product Search
Shashank Gupta
ECNLP@ACL20, Position paper.

RARE: A Recurrent Attentive Recommendation Engine for News Aggregators
Vaibhav Kumar, Dhruv Khattar, Shashank Gupta, Manish Gupta, and Vasudeva Varma
CIKM 2018, Workshop on News Recommendation and Analytics (INRA 2018).

CIMTDetect: A Community Infused Matrix-Tensor Coupled Factorization Based Method for Fake News Detection
Shashank Gupta, Raghuveer Thirukovalluru, Manjira Sinha, and Sandya Mannarswamy.
ASONAM 2018, Short.

Multi-Task Learning for Extraction of Adverse Drug Reaction Mentions from Tweets
Shashank Gupta, Manish Gupta, Vasudeva Varma, Sachin Pawar, Nitin Ramrakhiyani, Girish Keshav Palshikar
ECIR 2018 (Full) and NIPS 2017 ML4H Workshop.

A Co-training Based Method for Extraction of Adverse Drug Reaction Mentions from Tweets
Shashank Gupta, Manish Gupta, Vasudeva Varma, Sachin Pawar, Nitin Ramrakhiyani, Girish Keshav Palshikar
ECIR 2018 (Short) and NIPS 2017 ML4H Workshop.

TCS Research at TAC 2017: Joint Extraction of Entities and Relations from Drug Labels using an Ensemble of Neural Networks
Sachin Pawar, Nitin Ramrakhiyani, Girish Keshav Palshikar, Shashank Gupta, Vasudeva Varma
TAC 2017 ADR Track.

Semi-Supervised Recurrent Neural Network for Adverse Drug Reaction Mention Extraction
Shashank Gupta, Sachin Pawar, Nitin Ramrakhiyani, Girish Keshav Palshikar, and Vasudeva Varma
CIKM 2017, Workshop on Data and Text Mining in Biomedical informatics, and BMC Bioinformatics Special Issue.

Enhancing Categorization of Computer Science Research Papers using Knowledge Bases,
Shashank Gupta, Priya Radhakrishnan, Manish Gupta, Vasudeva Varma
SIGIR 2017, Works. on Knowledge Graphs & Semantics for Text Retrieval & Analysis.

Deep Neural Architectures for News Recommendation,
Vaibhav Kumar, Dhruv Khattar, Shashank Gupta, Manish Gupta, Vasudeva Varma
Conference and Labs of the Evaluation Forum (CLEF) 2017 (50 citations).

Simultaneous Inference of User Representations and Trust,
Shashank Gupta, Pulkit Parikh, Manish Gupta, Vasudeva Varma
ASONAM 17, Short.

Deep Learning for Hate Speech Detection in Tweets
Pinkesh Badjatiya*, Shashank Gupta*, Manish Gupta, Vasudeva Varma **(*Equal Contribution)(Best Poster Award)**
WWW 2017, Poster track.

Scientific Article Recommendation by using Distributed Representations of Text and Graph
Shashank Gupta, Vasudeva Varma
WWW 2017, Workshop track.

User Profiling based Deep Neural Network for Temporal News Recommendation
Vaibhav Kumar, Dhruv Khattar, Shashank Gupta, Manish Gupta, and Vasudeva Varma
ICDM 2017, Workshop Track.

Word Semantics based 3D Convolutional Neural Networks for News Recommendation
Vaibhav Kumar, Dhruv Khattar, Shashank Gupta and Vasudeva Varma
ICDM 2017, Workshop track.

SKILLS & TOOLS

PyTorch, Keras, Scikit-Learn, Tensorflow, Theano
Lucene, ElasticSearch
Python, MATLAB, C, C++, Java

AWARD AND ACHIEVEMENTS

Received the **Best Poster Paper Award** at International World Wide Web Conference **(WWW) 2017**.
Work on hate speech detection got covered in The Hindu, Indian Express and few other leading news outlets. **http://bit.ly/2k9FnFi**
SIGIR student travel grant to attend SIGIR and ICTIR 2023.
SIGCHI student travel grant to attend UMAP 2023 (declined).
Travel Grant to attend NIPS 2017 (declined).
TCS Research travel grant for attending CIKM'17.
Selected to attend IISC's Winter School on Machine Learning 2015.

RELEVANT COURSEWORK

Machine Learning
Information Retrieval and Extraction
Topics in Information Retrieval
Topics in Natural Language Processing
Digital Image Processing

STUDENT SUPERVISION

Richter Van Emmerik (BSc AI 2023): Exploring large language models for recommender system.
Beer Meester (BSc AI 2023): Offline reinforcement learning for learning to rank.
Srijan Kaur (Masters UvA 2022): Knowledge distillation for efficient user modeling.

TALKS

Safe Deployment for Counterfactual Learning to Rank, Presented at ShareChat ML Seminar (remotely).
Recent Advancements in Counterfactual Learning to Rank, Tutorial presentation at SIGIR 2023.
Safe Deployment for Counterfactual Learning to Rank, Presented at MetaAI, New York (remotely).
Safe Deployment for Counterfactual Learning to Rank, Oral presentation at SIGIR 2023.
VAE-IPS: A Deep Generative Recommendation Method for Unbiased Learning From Implicit Feedback, Presented at CONSEQUENCES+REVEAL workshop@RecSys'22.
Session Length Prediction for Product Search on E-commerce Platform, Presented at SIGIR, 2020 **https://dl.acm.org/doi/abs/10.1145/3397271.3401219**
Scientific Article Recommendation using Deep Embeddings, Presented at World Wide Web Conference, Perth, 2017 **http://bit.ly/2nfmhi3**
Trust Prediction in Social Network using Deep Neural Networks, Presented at ASONAM conference, Sydney, 2017 **http://bit.ly/2zya7CF**
Semi-supervised Recurrent Neural Network for Adverse Drug Reaction Mention Extraction from Twitter, Presented at CIKM Conference, Singapore, 2017
Pharmacovigilance from Social Media using Multi-task and Semi-Supervised Learning, Presented at ECIR Conference, Grenoble, 2018
Machine Learning Methods for Mining Adverse Drug Reactions from Social Media, Presented at DUKE-NUS Medical School, Singapore, 2017
Deep Learning Methods for Recommendation Systems, Presented at Thiagarajar College of Engineering, Madurai
Information Retrieval from Social Media, Presented at Alumni Research Talk (ART), BITS Pilani, Pilani.