

PRAKHAR GUPTA

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PERSONAL SUMMARY

3+ years of industrial research experience, 4 issued patents and multiple publications in peer-reviewed conferences. Passionate about applying ML techniques to solve real world problems. Skilled in machine learning, problem solving, and programming. Primary interests in natural language understanding, generation and dialogue systems. Currently working on controllable and low-resource text generation problems.

EDUCATION

CARNEGIE MELLON UNIVERSITY, PA, USA

August 2018 - Present

- PhD and MS, Language Technologies Institute
- GPA: 4.03/4
- Courses - Deep Learning, Machine Learning, Algorithms for NLP, Reinforcement Learning

INDIAN INSTITUTE OF TECHNOLOGY, ROORKEE, INDIA

July 2010 - June 2015

- B.Tech. and M.Tech. (Dual Degree) in CS
- GPA: 8.95/10, Distinction awarded
- Courses - Design and Analysis of Algorithms, Data Mining, Artificial Intelligence

EXPERIENCE

RESEARCH ASSISTANT, Carnegie Mellon University

August 2018 - Present

- Designed and deployed a dialog system for a Darpa project named Active Social Engineering Defense. System orchestrates strategies based on rules, generative and retrieval mechanisms to waste scammers' time and resources. Sole graduate student responsible for all aspects including research, development, testing, deployment and analysis.
- Research oriented towards controllable dialogue and text generation, and low-resource domain adaptation

RESEARCH ASSOCIATE 2, Adobe Research India

July 2015 - August 2018

- Developed user profiling, time series prediction and data summary generation components of a system which provides personalized insights and alerts for marketers.
- Developed a query reformulation system for a commercial image search engine with Seq2Seq models that captures session context, and a multitask architecture that simultaneously optimizes the ranking of results.
- Implemented a system for identifying fine-grained story clusters within broader trending topics on Twitter.

TECHNICAL SKILLS

- Python (including scikit-learn, Pandas, numpy, etc.), Java, node.js, Javascript, React
- Experience with frameworks like Pytorch, Tensorflow, Keras, Hadoop, MapReduce and computing clusters.
- Data mining, cleaning, and imputing, statistical data modeling and analysis, quick prototype development

SELECTED PUBLICATIONS

- **Prakhar Gupta**, Yulia Tsvetkov, Jeffrey P. Bigham, “Synthesizing Adversarial Negative Responses for Robust Response Ranking and Evaluation”, ACL 2021 Findings
- **Prakhar Gupta**, Jeffrey P. Bigham, Yulia Tsvetkov, and Amy Pavel. ”Controlling Dialogue Generation with Semantic Exemplars.”, NAACL 2021
- Gaurav Verma, Vishwa Vinay, Sahil Bansal, Shashank Oberoi, and Makunda Sharma, **Prakhar Gupta**, “Using Image Captions and Multitask Learning for Recommending Query Reformulations”, ECIR, 2020
- **Prakhar Gupta**, Vinayshekhar Bannihatti Kumar, Mukul Bhutani, and Alan W Black. *Writerforcing : Generating more interesting story endings* In Proceedings of the Second Workshop on Storytelling, ACL, 2019
- **Prakhar Gupta**, Shikib Mehri, Tiancheng Zhao, Amy Pavel, Maxine Eskenazi and Jeffrey Bigham, *Investigating Evaluation of Open-Domain Dialogue Systems With Human Generated Multiple References*, SIGDIAL 2019
- Gaurush Hiranandani*, Harvineet Singh*, **Prakhar Gupta***, Branislav Kveton, Zheng Wen, Iftikhar Burhanuddin *Cascade Linear Submodular Bandits: Accounting for Position Bias and Diversity in Online Learning to Rank*, UAI 2019
- **Prakhar Gupta**, Shubh Gupta, Ajaykrishnan Jayagopal, Sourav Pal, Ritwik Sinha, *Saliency Prediction for Mobile User Interfaces*, In 2018 IEEE Winter Conference on Applications of Computer Vision, WACV 2018
- Kokil Jaidka, Kaushik Ramachandran, **Prakhar Gupta**, and Sajal Rustagi. *SocialStories: Segmenting Stories within Trending Twitter Topics*, In Proceedings of the 3rd IKDD Conference on Data Science, 2016
- **Prakhar Gupta**, Sandeep Kumar, Kokil Jaidka. *Summarizing Customer Reviews through Aspects and Contexts*, in International Conference on Intelligent Text Processing and Computational Linguistics, CI-CLing 2015

4 US Issued patents - information on website

TEACHING AND RESPONSIBILITIES

- TEACHING ASSISTANT - for Multimodal machine learning (MMML) course under Prof. Louis-Philippe Morency. Responsibilities include mentoring student projects, holding office hours, grading assignments.
- TEACHING ASSISTANT - for Data Structures course. Facilitated hour-long interactive tutorials.
- INTERNSHIP MENTOR - Mentored students at Adobe Research over their summers research internships.
- COORDINATOR - Mobile Application Development group at Indian Institute of Technology Roor-kee, India.