

# KANAV MEHRA

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## EDUCATION

### University of Waterloo

*Master of Mathematics, Computer Science (Thesis)*

Cumulative GPA: 94.5%

Coursework: Reinforcement Learning, Affective Computing

Waterloo, Canada

2021 - 2023

### Indian Institute of Engineering Science and Technology, Shibpur

*Bachelor of Technology in Information Technology*

Cumulative GPA: 8.9/10.0 (First Class Honours)

Relevant Coursework: Artificial Intelligence, Data Structures and Algorithms, DBMS, Modelling & Simulation

West Bengal, India

2015 - 2019

## RESEARCH EXPERIENCE

### Data Science for Social Good Foundation

*Data Scientist, Volunteer*

Jul 2020 - Nov 2020

- Developed two novel methodologies that leverage Twitter discourse to characterize narratives and identify unmet needs in response to natural disasters, in partnership with the International Water Management Institute (IWMI).
- Built integrated models based on the concepts of network analysis and a wide range of NLP methods such as sentiment analysis, POV extraction, text summarization, and zero-shot text classification.

### Indian Institute of Technology, Kharagpur

*Research Intern, Department of Computer Science*

West Bengal, India

May 2017 - Jul 2017

- Worked on combining multiple algorithms to develop novel unsupervised and supervised ensemble summarization algorithms using graph processing and learning-to-rank methods.
- Evaluated and compared eight off-the-shelf extractive summarization algorithms using the ROUGE metric. Applied the algorithms on different text documents, including the DUC datasets and microblogs collected from Twitter.

## PROFESSIONAL EXPERIENCE

### PwC India

*Technology Consultant*

Kolkata, India

Jul 2019 - Sep 2021

- Implemented an infrastructure and service monitoring system with real-time anomaly detection, customized alerting profiles, and automated incident generation to track application performance.
- Created geospatial visualizations to highlight spam attack trends and classify threats based on the intensity of attacks. Implemented a spam prediction model using Splunk MLTK to forecast location specific spam attacks.

## RESEARCH PROJECTS

### Summarization of Microblogs for Disaster and Emergency Preparedness

Extracted information from social networking sites during disasters and used the same information to build a responsive system to provide useful information for rescue operations (using machine learning, specifically NLP and summarization techniques). **Advisor:** Dr. Saptarshi Ghosh, IIT Kharagpur, India

### Autonomous Coaches for Managing Workplace Meetings

Designing a responsive humanoid chatbot for multi-party communication which simulates the behaviour of a human manager while taking autonomous control over a meeting. We also analyzed the change in behaviour of the participants in different scenarios. **Advisor:** Dr. Malay Bhattacharyya, ISI Kolkata

## PUBLICATIONS

Crayton, A., Fonseca, J., **Mehra, K.**, Ng, M., Ross, J., Sandoval-Castañeda, M. & von Gnechten, R. (2020). *Narratives and Needs: Analyzing Experiences of Cyclone Amphan Using Twitter Discourse*. Tackling Climate Change with Machine Learning Workshop at NeurIPS 2020. AI for Social Good Workshop at IJCAI 2020. [refereed]

Dutta, S., Chandra, V., **Mehra, K.**, Ghatak, S., Das, A. & Ghosh, S. (2018). *Summarizing Microblogs during Emergency Events: A Comparison of Extractive Summarization Algorithms*. International Conference on Emerging Technologies in Data Mining and Information Security (IEMIS), pp. 859-872. [refereed]

Dutta, S., Chandra, V., **Mehra, K.**, Das, A., Chakraborty, T. & Ghosh, S. (2018). *Ensemble Algorithms for Microblog Summarization*. IEEE Intelligent Systems, Issue on "Summarization of Things", vol. 33, no. 3, pp. 4-14. [refereed]

**Mehra, K.**, Chandra, V. (2017). *Summarizing Microblogs for Emergency Relief and Preparedness*. European Conference on Information Retrieval (ECIR), SMERP Data Challenge Track, Aberdeen, Scotland

## HONORS & AWARDS

PwC STAR&R Client Appreciation Award

2020

GAABESU Undergraduate Research Award for excellence in research

2019

President, The Debating Society of IEST Shibpur

2019

SMERP Data Challenge - Summarization Track, SMERP Workshop, ECIR 2017 : 1<sup>st</sup> Position

2017

## TECHNICAL SKILLS

**Programming Languages:** Python, C, SQL, Splunk SPL, PromQL

**Technologies:** NumPy, Sklearn, Pandas, Git, Keras, Elasticsearch, Splunk, Prometheus, Grafana