

Utsav Das

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EDUCATION

University of Waterloo, School of Computer Science, Waterloo, Canada	2019 – 2022
Master of Mathematics, Computer Science – Machine Learning & Natural Language Processing	GPA: 87/100 (Grade A)
Thesis: Disentanglement of Syntactic Components for Text Generation	
Awards: Received full scholarship for the program through International Master's Award for Excellence and Graduate Research Scholarship	
University of Mumbai, India	2015 – 2019
Bachelor of Engineering – BE, Information Technology	GPA: 8.72/10

SKILLS

- **Languages:** Python, C/C++, Bash
- **Frameworks and Libraries:** PyTorch, Keras/Tensorflow, NLTK, spaCy, Gensim, NumPy, Pandas, Scikit-learn, Flask
- **Tools and Technologies:** Git, MongoDB, SQL, Microsoft Azure, LaTeX
- **Graduate Coursework:** Deep Learning and NLP, Reinforcement Learning, Privacy and Fairness in Data Science, AI: Law, Ethics and Policy

EXPERIENCE

Natural Language Processing (NLP) Research Lab, University of Waterloo	Sept 2019 – Aug 2022
Graduate Research and Teaching Assistant	
Supervisor: Dr. Olga Vechtomova	
<ul style="list-style-type: none">• Carried out 5+ research projects on text generation with an emphasis on style-transfer and disentanglement.• Designed a variational autoencoder with graph convolutional networks for creative text generation while controlling syntactic components.	
Manulife Financial – Advanced Analytics Division	Nov 2019 – Mar 2021
NLP Researcher	
<ul style="list-style-type: none">• Developed 2 new systems to gain strategic insights from internal data and improve Manulife's decision making. Led a team of 3 researchers to carry out the projects.• Developed BERT-based methods and graph convolutional networks to perform aspect-based sentiment analysis.• Designed variational autoencoder-based and clustering-based topic modelling methods for short text.• Achieved competitive qualitative and quantitative performance on multiple datasets.	
Measuring and Mitigating Unintended Bias	Oct 2019 – Dec 2019
<ul style="list-style-type: none">• Led a team of 2 graduate students to measure impact of identity terms in text on bias in hate speech detection models.• Implemented bias mitigation strategies such as identity term removal and data augmentation to reduce false negatives. Bias reduction and accuracy remained competitive with state-of-the-art approaches.	
Disruption of Object Recognition Systems – Senior Year Capstone Project	Jan 2019 – April 2019
<ul style="list-style-type: none">• Implemented generative adversarial networks to foil performance of object detection CNNs.• Conducted a systematic survey of current disruption strategies, defense techniques, and object recognition networks.	
Mastek Ltd	
Software Development Intern	Jun 2018 – Jul 2018
<ul style="list-style-type: none">• Led and worked with a team of 2 interns to develop an information bot with Node.js, MongoDB and, Microsoft Azure's Cognitive Services to answer questions about the company's HR policies.• Reduced manual queries from employees by over 50%.	

Student Developer

Oct 2017 – Feb 2018

- Led a team of 4 students in a citywide initiative to provide digital solutions to non-profits.
- Built a recommender system with Python, Flask, MongoDB, NLTK and gensim to help non-profits find prospective volunteers on Twitter. Used topic modelling and network analysis to recommend relevant people.

EXTRACURRICULARS

- Served as a teaching assistant to 6 undergraduate computer science courses. Graded student assignments and assisted course management for 100+ students.
- NLP Reading Club - Discussed 1 paper a week with students on current NLP topics like Style Transfer and Transformer-based architectures like Longformer, Reformer, etc.
- UWaterloo Book Club – Read and discussed works of fiction and non-fiction. Continued reading 1 book a week during the pandemic with the Waterloo and Kitchener Public Libraries.
- Represented my undergrad college in 10+ debates, Model United Nations, and other public speaking events.
- Served as Editor and Editor-in-Chief of the undergraduate campus student magazine for 2 years.