

# ATULA TEJASWI NEERKAJE

Email ◇ LinkedIn ◇ GitHub ◇ Google Scholar ◇ Personal Website

## EDUCATION

### Manipal Institute of Technology

Bachelor of Technology (B.Tech) in Computer Science and Engineering, CGPA: 9.45

Manipal, India

Expected May 2023

## PUBLICATIONS

- Ramit Sawhney\*, **Atula Tejaswi Neerkaje\***, Ivan Habernal, and Lucie Flek. How Much User Context Do We Need? Privacy by Design in Mental Health NLP Applications. Accepted to *The International AAAI Conference on Web and Social Media (ICWSM)*, 2023. [paper]
- Ramit Sawhney, Megh Thakkar, Ritesh Soun, **Atula Tejaswi Neerkaje**, Vasu Sharma, Dipanwita Guhathakurta, and Sudheer Chava. Tweet Based Reach Aware Temporal Attention Network for NFT Valuation. In *Findings of the Association for Computational Linguistics: EMNLP 2022* (pp. 6321-6332) [paper]
- Puneet Mathur, **Atula Tejaswi Neerkaje**, Malika Chhibber, Ramit Sawhney, Fu-Ming Guo, Franck Dernoncourt, Sanghamitra Dutta, Dinesh Manocha. MONOPOLY: Financial Prediction from Monetary Policy Conference Videos Using Multimodal Cues. In *Proceedings of the 28th ACM International Conference on Multimedia (ACMMM)*. Oct 10, 2022 (pp. 2276-2285). [paper]
- Ramit Sawhney\*, Shivam Agarwal\*, **Atula Tejaswi Neerkaje\***, Nikolaos Aletras, Preslav Nakov, and Lucie Flek. Towards Suicide Ideation Detection Through Online Conversational Context. In *Proceedings of the 45th International ACM SIGIR Conference on Research and Development in Information Retrieval*. Jul 6, 2022 (pp. 1716-1727). [paper] [code]
- Victor Petrén Bach Hansen\*, **Atula Tejaswi Neerkaje\***, Ramit Sawhney, Lucie Flek, and Anders Søgaard. The Impact of Differential Privacy on Group Disparity Mitigation. *The Fourth Workshop on Privacy in Natural Language Processing (PrivateNLP)*, July 2022. [paper] [code]
- Ramit Sawhney\*, **Atula Tejaswi Neerkaje\***, and Manas Gaur. A Risk-Averse Mechanism for Suicidality Assessment on Social Media. In *Proceedings of the 60th Annual Meeting of the Association for Computational Linguistics (ACL)*. May 2022 (pp. 628-635). [paper]
- Ramit Sawhney\*, Shivam Agarwal\*, **Atula Tejaswi Neerkaje\***, Kapil Pathak\*. Orthogonal Multi-Manifold Enriching of Directed Networks. In *Proceedings of the International Conference on Artificial Intelligence and Statistics (AISTATS)*. May 3, 2022 (pp. 6074-6086) [paper] [code]

All conferences listed above are Peer-Reviewed. \* indicates equal contribution.

## EXPERIENCE

### Research Intern

Indian Institute of Science

Supervised by **Prof. Aditya Gopalan** on machine learning and optimization, including Natural Language Processing based problems.

Jan 2023 - Present

Bangalore, India

### Research Intern

Language, Reasoning and Education Lab, ETH Zurich

Supervised by **Prof. Mrinmaya Sachan** on neuro-symbolic methods for Natural Language Processing.

Dec 2022 - Present

Switzerland (Remote)

### Research Intern

Université du Québec à Montréal

Supervised by **Prof. Marie-Jean Meurs** on an AI-based system for anonymization in corpora of personal data, such as in the legal domain and in the mental health domain.

May 2022 - Aug 2022

Montréal, Canada

- Explored adversarial training, reinforcement learning, and differential privacy for obfuscation of implicit indicators of private information and authorship attributes, in order to release readable, anonymized versions of text corpora for downstream tasks. Also explored Named Entity Recognition and other pseudo-anonymization strategies as part of the pipeline.

## External Collaborator

Jan 2021 - Present

Conversational AI and Social Analytics (CAISA) Lab, University of Marburg

Germany (Remote)

Working with **Prof. Lucie Flek** and **Ramit Sawhney** on user-contextual modeling and privacy preservation, mainly for NLP and Computational Social Science problems.

- Implemented neural network architectures which included Transformers, Graph Neural Networks, and Hyperbolic Neural Networks for these tasks.
- Mined and modeled user-contextual information such as discourse threads and user post history.
- Studied the impact of differential privacy (DP-SGD) on model fairness, robustness to distribution shifts, and on user-contextual modeling.

## AI Division Member

Feb 2020 - Aug 2022

Project MANAS

Manipal, India

The official AI and Robotics team of Manipal, with a team primarily dedicated to building an autonomous car for Indian roads. The team also works on autonomous UAVs.

- Set up a deep learning based lane detection module for the autonomous car, which was trained on the CULane dataset. When tested on campus roads, the approach yielded an improvement of 5% over existing pipelines.
- Integrated an iterative matching algorithm for merging LiDAR data from multiple sensors for improved dense point cloud representations.
- Explored Reinforcement Learning algorithms on the CARLA simulation environment.

## AWARDS

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### Mitacs GRI 2022

Awarded a fully-funded scholarship by Mitacs Inc., Canada to pursue a summer research project at the Université du Québec à Montréal on anonymization and bias reduction in AI & Natural Language systems.

### DAAD WISE 2022

Selected for the DAAD WISE research scholarship award for Summer 2022.

### Mahindra Rise Prize Challenge

Project MANAS won the Million Dollar Mahindra Rise Prize Challenge, placed top 13 out of 153 teams in India.

## TALKS

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The Impact of Differential Privacy on Group Disparity Mitigation. At *The Fourth Workshop on Privacy in Natural Language Processing at NAACL 2022 (PrivateNLP)*. Duration: 10 minutes.

Towards Suicide Ideation Detection Through Online Conversational Context. At *The 45th International ACM SIGIR Conference on Research and Development in Information Retrieval*. Duration: 12 minutes. **[Video Link]**

## PROGRAMMING SKILLS

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### Languages

Python, C, C++, Java

### Libraries and Frameworks

PyTorch, Tensorflow, Deep Graph Library (DGL), Keras

## COURSEWORK

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Graph Analytics for Big Data, Machine Learning for Big Data, Software Testing and Analysis, Social Network Analysis, Distributed Systems, Parallel Programming, Big Data Modelling, Data Structures and Applications, Design and Analysis of Algorithms, Algorithmic Trading, Object Oriented Programming, Welcome to Game Theory - Coursera

(2021), Reinforcement Learning Specialization - Coursera (2020), Natural Language Processing Specialization, Deep Learning Specialization - Coursera (2020), Mathematics for Machine Learning - Coursera (2020).

## ACTIVITIES

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Nov 2021	-	Feb 2022	Reviewer and volunteer at AISTATS 2022
Aug 2020	-	Sep 2021	Association for Computing Machinery, Manipal Chapter
Sep 2019	-	Sep 2020	The Photography Club, Manipal
Aug 2019	-	Present	Linux Users Group, Manipal

I am a Junior Level Carnatic Violinist, and I also play the Keyboard. Football and Tennis are also my hobbies.