RISHABH GUPTA

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WORK EXPERIENCE

Incoming Software Engineer at Google   Expected Start: July 2023

Undergraduate Researcher at LCS2 Lab, IIIT-Delhi   May 2021 - Present
- *Supervisors*: Dr Tanmoy Chakraborty and Dr Md. Shad Akhtar
- Working on targeted class-conditioned counter-speech generation for online hate speech mitigation by learning discrete quantized vectors corresponding to the generation target
- Previously worked on detecting speaker personas in unimodal multi-party conversations

Research Intern at Extramarks and ADS Lab, IIIT-Delhi   May 2021 - Present
- *Supervisors*: Dr Mukesh Mohania and Dr Vikram Goyal
- Working in the field of self-supervised NLP to improve the online pedagogical subspace
- Theorised and implemented a novel self-supervised framework leveraging syntactic and contextual denoising with the fusion of grounded information for paraphrasing
- Designed domain-aware data augmentations to build an unsupervised paraphrase quality detector using transfer learning for word problems

Software Development Intern at Media.net (Directi)   May 2022 - July 2022
- Developed an asynchronous application for automated task scheduling to streamline workflows
- Designed an extensible framwork for execution of tasks as well as implementing combination strategies to reduce latency
- Integrated support for post analytics using different data models for meta-data logs

Research Intern at Georgia State University and Midas Lab, IIIT-Delhi   Jan 2022 - May 2022
- *Supervisor*: Dr Ugur Kursuncu
- Worked on the problem statement of generating multi-modal persuasive content

PUBLICATIONS

- ***Counterspeeches up my sleeve!* Intent Distribution Learning and Persistent Fusion for Intent-Conditioned Counterspeech Generation**, *ACL'23 (Main Conference)*. Rishabh Gupta, Shaily Desai, Manvi Goel, Anil Bandhakavi, Tanmoy Chakraborty, Md. Shad Akhtar
- **'John ate 5 apples' != 'John ate some apples': Self-Supervised Paraphrase Quality Detection for Algebraic Word Problems**, *ECML-PKDD'22*. Rishabh Gupta, Venktesh V, Mukesh Mohania, Vikram Goyal. [paper][code]
- ***Coherence and Diversity through Noise*: Self-Supervised Paraphrase Generation via Structure-Aware Denoising**, *Under Review*. Rishabh Gupta, Venktesh V, Mukesh Mohania, Vikram Goyal. [paper][code]
- **Speaker Profiling in Multi-Party Conversations**, *Under Review*. Shivani Kumar, Rishabh Gupta, Md. Shad Akhtar, Tanmoy Chakraborty.
- **Question GenIES: Question Generation with Interpretable Explainable Solutions**, *Under Review*. Tushar Mohan, Pritish Gulati, Rishabh Gupta, Mukesh Mohania, Vikram Goyal.
- **NL-Augmenter: A Framework for Task-Sensitive Natural Language Augmentation**, *arXiv preprint*. Kaustubh Dhole, Varun Gangal, ..., Rishabh Gupta, Louanes Hamla et al.

Education

Indraprastha Institute of Information Technology, Delhi   **CGPA**: 9.30/10
Bachelor of Technology, Computer Science and Engineering
Amity International School, Sector 43, Gurgaon   **Grade XII**: 96.6%
CBSE, Subjects: Physics, Chemistry, Mathematics and Computer Science   **Grade X**: 10.0/10.0

Awards and Achievements

– **Dean's Award for Excellence in Research and Innovation** *(Calendar Year 2021-2022)*
– **Dean's Award for Academic Excellence** *(Calendar Year 2021-2022)*
– **Dean's Award for Academic Excellence** *(Calendar Year 2020-2021)*
– **Kishore Vaigyanik Protsahan Yojana Fellowship** *Awarded by IISc, Bangalore*
– **Google Research Week'23:** Among the 50 undergrads selected for the NLP track across India

Select Projects

Uncertainty-Aware Neural Complexity Measures   [code][writeup]

– Implemented the NeurIPS'20 paper, Neural Complexity Measures on a new multitask dataset containing multiple regression and multi-class classification tasks
– Proposed *Uncertainty-Aware Gap Estimation*, which takes uncertainty of the meta-learner into account when estimating the generalization gap and demonstrated improved performance

NewsHelper   [demo]

– Automated summary and headline generation with source classification for news articles
– Curated a novel dataset of over 60k news articles and leveraged transfer learning over pretrained transformer models with a two-stage training pipeline for sequence generation and classification

Relevant Service

– *Reviewer*: **ACL'23, EMNLP'22, ACL Rolling Review**
– *Teaching Assistant:* **Meta-Learning** (Winter'23); **Optimization for ML** (Winter'22);
– *Volunteer:* **ICON'22**
– *Lead*: **Machine Learning Team, Google Developer Student Clubs**, IIIT-D Chapter
– *Member:* **Organizing Team, Odyssey'20** (IIIT-Delhi); **Student Council** (AIS, Gurgaon)

Featured Coursework

– **Calendar Year (2022-2023), IIIT-D**: Reinforcement Learning (A), Bayesian Machine Learning (A+), Information Integration and Applications (A)
– **Calendar Year (2021-2022), IIIT-D**: Meta-Learning (A), Advanced Machine Learning (A), Natural Language Processing (A), Computer Networks (A)
– **Calendar Years (2019-2021), IIIT-D**: Probability and Statistics (A), Multivariate Calculus (A), Differential Equations (A), Analysis and Design of Algorithms (A), DBMS (A), Linear Algebra (A-)
– **MOOCs**: MITx 18.6501x: Fundamentals of Statistics, MITx 6.86x: Machine Learning with Python-From Linear Models to Deep Learning, Natural Language Processing Specialization, Mathematics for Machine Learning by Imperial College London, CS11-747: Neural Networks for NLP, CMU