Rishabh Joshi

Contact Information

Carnegie Mellon University
Pittsburgh, PA, USA

E-mail : rjoshi2@cs.cmu.edu
Links : Webpage, Google Scholar, LinkedIn

Education

Carnegie Mellon University - School of Computer Science ; Pittsburgh, USA — Aug 2021
Master of Science in Language Technologies — CGPA : 3.94
Courses : 10701, 11711, 11747, 11830, 10703, 10737, 10716

Birla Institute of Technology and Science (BITS), Pilani ; Pilani, India — June 2018
Bachelor of Engineering (Hons.) in Computer Science — CGPA : 9.28/10
Thesis on "Distantly Supervised Relation Extraction using Side Information" at IISc, Bangalore

The Mother's International School ; Delhi, India — May 2014
Class XII, CBSE — 95.6%
Class X, CBSE — CGPA : 10/10

Publications

Rishabh Joshi, Vidhisha Balachandran, Shikhar Vashishth, Alan W Black and Yulia Tsvetkov. DialoGraph : Incorporating Interpretable Strategy-Graph Networks into Negotiation Dialogues. *In Proc. ICLR '21.* [Paper]

Ritam Dutt, Sayan Sinha, **Rishabh Joshi**, Surya Shekhar Chakraborty, Meredith Riggs, Xinru Yan, Haogang Bao and Carolyn Rose. ResPer : Computationally Modelling Resisting Strategies in Persuasive Conversations. In *Proc. EACL '21.*

Ritam Dutt, **Rishabh Joshi** and Carolyn Rosé. Keeping Up Appearances : Computational Modeling of Face Acts in Persuasion Oriented Discussions. In *Proc. EMNLP '20.* [Paper]

Fanglin Chen, Ta-Chung Chi, Shiyang Lyu, Jiachen Gong, Tanmay Parekh, **Rishabh Joshi**, Anant Kaushik and Alexander Rudnicky. Tartan : A Two-Tiered Dialog Framework for Multi-Domain Social Chitchat. In *Proc. 3rd Alexa Prize '19-'20.* [Paper]

Shikhar Vashishth, **Rishabh Joshi**, Ritam Dutt, Denis Newman-Griffis and Carolyn Rose. MedType : Improving Medical Entity Linking with Semantic Type Prediction. In *Proc. AMIA '21.* [Paper] [Demo]

Rishabh Joshi*, Sopan Khosla*, Ritam Dutt*, Alan W Black and Yulia Tsvetkov. LTIatCMU at SemEval-2020 Task 11 : Incorporating Multi-Level Features for Multi-Granular Propaganda Span Identification. In *Proc. SemEval '20.* [Paper]

Rishabh Joshi*, Gaurav Kumar*, Jaspreet Singh* and Promod Yenigalla. AMUSED : A Multi-Stream Vector Representation Method for Use in Natural Dialogue. In *Proc. LREC '20.* [Paper]

Rakesh Bal*, Sayan Sinha*, Swastika Dutta, **Rishabh Joshi**, Sayan Ghosh and Ritam Dutt. Analysing the Extent of Misinformation in Cancer Related Tweets. In *Proc. ICWSM '20.* [Paper]

Shikhar Vashishth, **Rishabh Joshi**, Sai Suman Prayaga, Chiranjib Bhattacharyya and Partha Talukdar. RESIDE : Improving Distantly-Supervised Neural Relation Extraction using Side Information. In *Proc. EMNLP '18.* [Paper] [Code]

Experience

Carnegie Mellon University — Pittsburgh, PA
Graduate Research Assistant (Advisors : Yulia Tsvetkov, Alan Black & Alex Rudnicky) Sept 2019 - Present

- Proposed an intrepretable text summarization based approach for forming expertise graphs by understanding important concepts of research articles which can then be used to study knowledge proliferation.
- Performed a linguistic driven analysis on the characteristics of good negotiators and incorporated explicit strategy-sequence structure using Graph Neural Networks to improve non-collaborative dialogue systems.
- Collaborated with team Tartan to develop a conversational system in Amazon Alexa Challenge 2019 ; developed mini-bots and analyzed conversational story structure, reached semi-finals.
- Modeled the structure of dialogue by analyzing the flow of conversational topics and detecting non-coherence. Submitted proposal for Alexa Challenge 2020.

Samsung Research Institute — Bangalore, India
Software Engineer - Natural Language Understanding — Aug 2018 - Aug 2019

- Improved open domain dialogue systems using side information and contextual knowledge.
- Constructed a low resource intent classification and speaker recognition solution using GMMs.

Indian Institute of Science Bangalore, India
Undergraduate Thesis (Advisor : Partha Talukdar) Jan 2018 - July 2018

- Constructed a unique India-Centric Knowledge Graph based on the Never-Ending Language Learning Paradigm.
- Improved Distantly-Supervised Relation Extraction using Side Information achieving SOTA results.

Samsung Research Institute Bangalore, India
Summer Intern - 5G Team May 2017 - July 2017

- Developed tools for packet generation and distributed analysis for the data link layer of 5G protocol.

Indian Institute of Remote Sensing, ISRO Dehradun, India
Research Intern (Advisor : Sameer Saran) May 2016 - July 2016

- Developed core API and execution engine of the DataCube for the effective storage, retrieval and analysis of large earth observation datasets using Python and ideas from distributed and parallel computing.

Projects

Multilingual Structured Text Summarization, Advisor : Yulia Tsvetkov, CMU Sept 2020 - Present

- Improved abstractive summarization by incorporating latent and explicit structure.
- Proposed adapter network based model to leverage multilingual translation advances in summarization.

Coherence Aware Curious Bot, Advisor : Alex Rudnicky, CMU June - Oct 2020

- Proposed a curious bot system which learns to ask better questions to keep conversations engaging.
- Leveraged Knowledge Graphs to form novel questions and keep track of dialogue coherence.

Detecting Bias in Visual Commonsense Reasoning, Advisor : Yulia and Alan, CMU Jan - May 2020

- Explored robustness in models and bias in the way male and female genders are portrayed in human reasoning in the domain of Visual Question Answering.
- Studied the different kinds of biases present in the answers and rationales of a common VQA dataset.

Propaganda Identification in News, Advisor : Yulia and Alan, CMU Jan - May 2020

- Proposed a multi-granular framework to incorporate multi-level features for the SemEval 2020 task of detecting propaganda spans in news articles. Performed 4^{th} in span identification task.

Face Acts and Resisting Persuasion Strategies, Advisor : Carolyn Rosé, CMU Jan - May 2020

- Proposed frameworks to encode notions of face in a conversation and resisting persuasion strategies (under review).

Teaching

Teaching Assistant for Applied Machine Learning 11-663, CMU Jan - Dec 2020

- Assisted Carolyn Rosé by taking office hours for around 100 students and assisting them in their group projects during Spring and Fall 2020.

Teaching Assistant for Data Structures and Algorithms, BITS Pilani Jan - May 2017

- Helmed two lab sections and was the jury for the online judge with the responsibility of assisting 200+ students. The course was taught by Sundar S Balasubramaniam.

Honors and Awards

- **Honourable Mention**, Won a cash prize of $200 for an oral presentation at CMU LTI SRS 2019
- **1st**, Campus ML Hackathon organized by MapMyIndia on Kaggle in APOGEE, BITS Pilani 2017
- **3rd**, ML Hackathon organized by D.E. Shaw on HackerEarth 2017
- **2nd**, E-Yantra, a robotics competition organized by MHRD and IIT Bombay 2016
- **Merit**, Recipient of Institute Merit Scholarship for academic excellence 2015
- **1574**, All India Rank (AIR), IIT-JEE (out of around 1,300,000) 2014
- **Inspire**, Recipient of Govt. of India Inspire Scholarship (top 1% in CBSE) 2014
- **All India Topper**, Chemistry, CBSE Class XII Board (100/100)
- **School Topper**, Computer Science, CBSE Class XII Board (99/100)

Positions of Responsibility

Executive Coordinator, Embryo Club, BITS Pilani Apr 2016 - Apr 2017

- Handled the finances of the club and raised club treasury from Rs. 20,000 to Rs. 180,000. Organized on campus talk by Amish Tripathi, handling all expenses and negotiations.

Joint Activities Coordinator, ACM BITS Chapter Aug 2015 - Aug 2016

- Conducted more than 8 events for ACM BITS chapter throughout the year. BITS-ACM won the best ACM chapter award for that year in India.

Extra Curricular Activities

Volunteered for National Service Scheme, BITS Pilani chapter from Aug 2014 to Aug 2017. Helped underprivileged people to become acquainted in computers. Organized Junoon, sports festival for physically challenged. Lectured junior year students on transition trends of Campus-to-Corporate (C2C) under Sushila Shekhawat.