Deepak Nathani

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About Me

I am a 1st year Ph.D Student at *University of California, Santa Barbara*, advised by Dr. William Yang Wang. My research interests revolve around Commonsense Reasoning, Conversational Text Generation, and Natural Language Generation. More specifically, I am interested in studying the relationship between parametric (local) knowledge and commonly known global knowledge required to solve most reasoning tasks using Large Language Models. This involves developing methods to detect when the local knowledge conflicts with the global knowledge and using both types of knowledge in conjunction to solve the task.

Education

2022–Present **PhD, Computer Science**
University of California Santa Barbara
Advisor: Dr. William Yang Wang.

2015–2019 **B.Tech, Mechanical Engineering**
Indian Institute of Technology Hyderabad.

2017–2019 **B.Tech, Computer Science and Engineering (Second Major)**
Indian Institute of Technology Hyderabad
Advisor: Dr. Manohar Kaul.

Publications

Conference Publications

[1] Kalpesh Krishna, **Deepak Nathani**, Xavier Garcia, Bidisha Samanta, and Partha Talukdar. Few-shot controllable style transfer for low-resource multilingual settings. In *Proceedings of the 60th Annual Meeting of the Association for Computational Linguistics (Volume 1: Long Papers)*, Dublin, Ireland, May 2022. Association for Computational Linguistics.

[2] Jatin Chauhan, **Deepak Nathani**, and Manohar Kaul. Few-shot learning on graphs via super-classes based on graph spectral measures. In *International Conference on Learning Representations*, 2020.

[3] Sumit Bhatia, Bapi Chatterjee, **Deepak Nathani**, and Manohar Kaul. A persistent homology perspective to the link prediction problem. In *Complex Networks and Their Applications VIII*, pages 27–39. Springer International Publishing, 2020.

[4] **Deepak Nathani**, Jatin Chauhan, Charu Sharma, and Manohar Kaul. Learning attention-based embeddings for relation prediction in knowledge graphs. In *Proceedings of the 57th Annual Meeting of the Association for Computational Linguistics*. Association for Computational Linguistics, 2019.

[5] Charu Sharma, **Deepak Nathani**, and Manohar Kaul. Solving partial assignment problems using random clique complexes. In *Proceedings of the 35th International Conference on Machine Learning, ICML 2018, Stockholmsmässan, Stockholm, Sweden, July 10-15, 2018*, pages 4593–4602, 2018.

Professional Experience

2020–2022 **Pre-Doctoral Researcher**, *Google Research India*, Bengaluru
Advisor: Dr. Partha Talukdar
Worked towards creating a Conversational Health Assistant and improving Text Style Transfer models.

2019–2020 **Software Engineering AMTS**, *Salesforce.com*, Hyderabad

2018–2018 **Summer Research Intern**, *IBM Research Labs*, New Delhi
Advisor: Dr. Sumit Bhatia, Dr. Bapi Chatterjee
Used Persistent Homology to learn shape and structure of the neighbourhood of a data item(node) and predict furtherlinks.

Awards & Scholarships

2022 **Academic Excellence Fellowship**, *University of California*, Santa Barbara

Academic Service

Reviewer SoCal NLP 2022, ICLR 2021-2023, NeurIPS 2021, EMNLP 2021

Sub-Reviewer NeurIPS 2020

Projects

Predicting Product Review helpfullness
Advisor: Dr. Maunendra Sankar Desarkar
Predicting review helpfulness from the review text and information about the reviewer. Used language model and desgined our own metric for calculating user rating.

Classical Music Generation
Advisor: Dr. Vineeth N Balasubramaniam
Used LSTMs to learn the notes and chords from classical music pieces. The model was trained on 3 different Artists and could generate music which was similar to the artist given.

Movie Recommendation System
Advisor: Dr. Manohar Kaul
Designed a database from scratch for movie recommender system. The project involved collecting data, designing a database schema, storing the data in the database using PostgreSQL. For generating recommendations we implemented user-user collaborative filtering algorithm.

Technical Skills

Programming C, C++, Python, MATLAB/Octave

Framework Tensorflow, PyTorch, Scikit-Learn

Miscellaneous

2017-2019 Coordinator, Infero - Programming Club, IIT Hyderabad

2018 Rank 30/250 teams, ACM-ICPC Amritapuri Regional