

Deepak Nathani

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Education

- 2015–2019 **B.Tech in Mechanical Engineering**,
Indian Institute of Technology, Hyderabad, 7.9/10.0.
- 2017–2019 **B.Tech in Computer Science and Engineering (Second Major)**,
Indian Institute of Technology, Hyderabad, 8.23/10.0.

Research Interests

I am interested in Machine Learning, Natural Language Processing and Information Retrieval. Recently I am interested in exploring the field of Graph Representation Learning and how it can be utilized in Knowledge Graphs applications.

Publications

Conference Publications

- [1] 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.
- [2] 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.
- [3] **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.
- [4] 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.

Experience

- 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.
- 2019–Present **Software Engineering AMTS**, *Salesforce.com*, Hyderabad.

Projects

Predicting Product Review helpfulness.

Advisor: Dr. Maunendra Sankar Desarkar

Predicting review helpfulness from the review text and information about the reviewer. Used language model and designed 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.

Relevant Coursework

Information Retrieval, Database Management Systems, Deep Learning, Applied Machine Learning, Data Structures, Algorithms, Discrete Structures II, Introductions to Data Structures

Skills

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

Framework Tensorflow, PyTorch, Keras, Scikit-Learn