Pratheeksha Nair

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ABOUT ME

Interested in developing and applying Machine Learning and AI models to address and solve socially relevant problems.

ACADEMIC ACHIEVEMENTS

Degree	University	Specialization	Year	Total
PhD	McGill University	Computer Science	2019-present	3.85/4.0
Integrated Master's	IIIT Bangalore	Computer Science Engineering	2014-2019	3.6/4.0
High School	Indian School Certificate	Mathematics and Science	2014	95.6/100.0

PUBLICATIONS

- Yue Li, **Pratheeksha Nair**, Xing Han Lu, Zhi Wen, Yuening Wang, et al, Inferring multimodal latent topics from electronic health records, *Nature Communications volume 11, Article number: 2536 (2020)*
- **Pratheeksha Nair**, Anup Deshmukh, Shrisha Rao, A Scalable Clustering Algorithm for Serendipity in Recommender Systems, *In the Workshop Proceedings of the 18th IEEE International Conference on Data Mining (ICDM 2018)*
- Rameshwar Pratap, **Pratheeksha Nair**, Anup Deshmukh, Tarun Dutt, Fast and Provable Concept Decompositions in Large Text Corpus, *In the Proceedings of Machine Learning Research (ACML 2018)*

TECHNICAL SKILLS

Languages (C++, Python), **Tools** (LaTeX, Matlab), **Libraries** (Keras, Pytorch)

RESEARCH EXPERIENCE

- **Group Equivariant Deep Reinforcement-Learning**
  (Course project: Introduction to Reinforcement Learning, Feb'20-May'30) - Under review in an ML conference
  Used group equivariant CNNs in Deep Q-Networks to learn Q-values for symmetric RL game environments like Snake and Pacman.
- **Mortality prediction on MIMIC-III using a latent topic model**
  (Guide: Prof. Yue Li, Aug'19 - Dec'19)
  Introduced the idea of treating different types of clinical notes from EHR (physician notes, nurses notes, etc) as different modalities in learning latent topics from MIMIC-III data and using the learned topics for mortality prediction.
- **Exploring Validity in Machine Generated Drugs - Master's thesis at IIIT Bangalore**
  (Guide: Prof. Dinesh Babu, Aug'18 - May'19)
  Generation of valid SMILES representation of molecules as a problem of semantic and syntactic sequence generation. These molecules are manifested as drugs with certain desired properties.
- **Method Summarization from Code - Internship at IBM Research AI Lab, India**
  (Guide: Rahul A R, May'18 - Aug'18)
  Applied sequence to sequence deep models to solve problems prevalent in Software Engineering. One particular use-case is the automatic generation of comments from code.
- **Scaling up Simhash - Collaboration with Prof. Pratap from IIT Mandi**
  (Guide: Prof. R Pratap, Jan'18 - May'18) - Currently under review
  Proposed a dimensionality reduction sketching algorithm - simsketch - which maintains an estimate of the cosine similarity between original real valued vectors.

ACHIEVEMENTS

- **Dean's Merit List** (IIIT-B) – Recognized for academic excellence on graduating with 3.6/4.0 GPA.
- **GHCI '18 Student Scholar** – Scholarship to attend India's largest gathering of women technologists produced by AnitaB.org and ACM India.
- **World Rank 7/1000+** (HackerRank Women's Cup 2015) – 3^{rd} place in India. Featured in a YourStory article.
- **World Rank 23/1500** (Adobe CODHERS Codesprint 2016) – 21^{st} place in India
- **World Rank 49/2500** (Women's CodeSprint 2016) – 19^{th} place in India

OTHER ACTIVITIES

- Teaching Assistant for Introduction to Computer Systems at McGill Universiy (2020), Programming Languages course (2019) and ML 101 course (2018)
- Curator at TEDx IIITB (2018)
- Mentor at the Student Mentoring Program of IIITB (2017-2018)