

# Pratheeksha Nair



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## ABOUT ME

Broadly interested in developing and applying Machine Learning (ML) models to solve socially relevant problems. Previously worked on ML for recommender systems and healthcare.

## 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

- Arnab Kumar Mondal, **Pratheeksha Nair**, Kaleem Siddiqi, [Group Equivariant Deep Reinforcement Learning](#), *Inductive Biases, Invariances and Generalization in RL (ICML 2020)*
- 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** (Numpy, Pandas, Keras, Pytorch)

## RESEARCH EXPERIENCE

- **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) - Under review in an IR conference  
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<sup>rd</sup> place in India. Featured in a [YourStory article](#).
- **World Rank 23/1500** (Adobe CODHERS Codesprint 2016) – 21<sup>st</sup> place in India
- **World Rank 49/2500** (Women's CodeSprint 2016) – 19<sup>th</sup> place in India

## OTHER ACTIVITIES

- Mentor at the Office of Student Disabilities (OSD) at McGill University (2020)
- Teaching Assistant for Introduction to Computer Systems at McGill University (2020)
- Teaching Assistant for Programming Languages course at IIIT-B (2019)
- Teaching Assistant for ML 101 course at IIIT-B (2018)
- Curator at TEDx IIITB (2018)
- Mentor at the Student Mentoring Program of IIITB (2017-2018)