# Pratheeksha Nair

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## ABOUT ME

Masters student of Computer Science and Engineering at IIIT-B. Interested in pursuing deep research in the emerging fields of **AI** and **ML** on **Computer vision** and **Natural Language Processing**.

## ACADEMIC ACHIEVEMENTS

| Examination | University | Specialization | Year | Total |
|---|---|---|---|---|
| Post Graduation | IIIT Bangalore | Computer Science Engineering | 2014-2019 | 3.56/4.0 (till date) |
| High School | Indian School Certificate | Mathematics and Science | 2014 | 95.6/100.0 |

## PAPER PUBLICATIONS

- A Scalable Clustering Algorithm for Serendipity in Recommender Systems *(To be presented at SAREC 2018 - ICDM Workshop)* - **Pratheeksha Nair**, Anup Deshmukh, Shrisha Rao
  Introduced a clustering-based technique of effectuating serendipity in recommender systems. It addresses sparsity by introducing a scalable spherical K-Means algorithm in collaborative filtering.
- Fast and Provable Concept Decompositions in Large Text Corpus *(To be presented at ACML 2018)* - Rameshwar Pratap, **Pratheeksha Nair**, Anup Deshmukh, Tarun Dutt
  Worked on a Markov Chain (MCMC) based sampling algorithm for k-means clustering of large document corpus that takes only one pass over data and gives 'k' cluster centers.

## TECHNICAL SKILLS

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

## EXPERIENCE

- **Method Summarization from Code - Internship at IBM Research AI Lab, India**
  *(Guide: Rahul A R, May'18 - Aug'18)*
  This work involves using sequence to sequence deep models to solve problems prevalent in Software Engineering. One particular use-case is the automatic generation of comments from code.
- **Detection of star clusters using Pattern Analysis - Indian Institute of Space Science and Technology (IIST)**
  *(Guide: Prof. Sarita Vig, May'17 - July'17)*
  Worked on a direct application of pattern analysis techniques for a highly relevant problem statement in astrophysics. Used the K-Nearest Neighbor algorithm for density estimation and detection of star clusters.
- **Scaling up Simhash**
  *(Guide: Dr R Pratap, Jan'18 - May'18)*
  Proposed a dimensionality reduction sketching algorithm - simsketch - which maintains an estimate of the cosine similarity between original real valued vectors.

## ACADEMIC PROJECTS

- **Word Embeddings for Medical Domain** *(Guide: Prof. G S Raghavan, Aug'18 - present)*
  Working on generating word embeddings specifically for medical terms making use of hierarchical ontologies in medicine.
- **Refreshable Braille Reader on Arduino Teensie** *(Guide: Prof. Sujit Kumar, Aug'18 - present)*
  Working on a text-to-Braille converter that runs on microcontrollers like Arduino.

## ACHIEVEMENTS

- **GHCI '18 Student Scholar**
  Scholarship to attend India's largest gathering of women technologists produced by AnitaB.org and ACM India.
- **World Rank 7** (HackerRank Women's Cup 2015)
  $7^{th}$ rank out of 1000+ participants in the world. $3^{rd}$ place in the country. Featured in a YourStory article.
- **World Rank 23** (Adobe CODHERS Codesprint 2016)
  $23^{rd}$ rank out of 1500+ participants all over the world. $21^{st}$ place in the country.
- **World Rank 49** (Women's CodeSprint 2016)
  $49^{th}$ rank out of 2500+ participants all over the world. $19^{th}$ place in the country.

## OTHER ACTIVITIES

- Teaching Assistant for GEN 511 ML course (2018)
- Mentor at the Student Mentoring Program of IIITB (2017-2018)
- Curator at TEDx IIITB (2018)
- Active member of the Dance Club of IIITB (2016-2019)