

Prathamesh Deshpande

CONTACT INFORMATION	C-330, Hostel 14, IIT Bombay, Powai, Mumbai - 400 076	+91-9043751980 prathameshsdeshpande@gmail.com
RESEARCH INTERESTS	Forecasting in temporal data (Time-series and point processes) Time-series modelling (predictive analytics, missing value imputation)	
EDUCATION	Ph.D., Computer Science and Engineering Indian Institute of Technology Bombay, Mumbai. <ul style="list-style-type: none">• Advisor: Prof. Sunita Sarawagi M.S. by Research, Computer Science and Engineering Indian Institute of Technology Madras, Chennai. <ul style="list-style-type: none">• Thesis Topic: <i>A Study of Community Detection Algorithms in Large Networks</i>• Advisor: Prof. B. Ravindran B.Tech., Information Technology Walchand College of Engineering, Sangli, Maharashtra.	Jul 2017 to Present Jan 2014 to Jul 2017 Jul 2009 to Jun 2013
PUBLICATIONS	<ul style="list-style-type: none">• Long Range Probabilistic Forecasting in Time-Series using High Order Statistics <i>Under Review.</i> Prathamesh Deshpande and Sunita Sarawagi [Arxiv], [Code]• Missing Value Imputation on Multidimensional Time Series In <i>VLDB 2021</i>. Parikshit Bansal, Prathamesh Deshpande, Sunita Sarawagi [Arxiv],• Long Horizon Forecasting With Temporal Point Processes In <i>WSDM 2021</i>. (AR 18.6 %) Prathamesh Deshpande, Kamlesh Marathe, Abir De, Sunita Sarawagi [Paper], [Code]• Streaming Adaptation of Deep Forecasting Models using Adaptive Recurrent Units In <i>ACM SIGKDD 2019</i>, August 4–8, 2019, Anchorage, AK, USA. (AR 14.2%) Prathamesh Deshpande and Sunita Sarawagi [Paper], [Code]• MCEIL: An Improved Scoring Function for Overlapping Community Detection using Seed Expansion Methods In <i>The 7th Workshop on Social Network Analysis in Applications, ASONAM 2017</i>, Sydney, Australia Prathamesh Deshpande and B. Ravindran [Paper]	
HONORS AND AWARDS	<ul style="list-style-type: none">• SIGIR Travel Grant to attend WSDM 2021, Virtual Event.• Google Travel Grant of USD2700 to attend KDD 2019, Anchorage, AK, USA.• Travel grant for attending ACM CoDS-COMAD 2018 conference, held in Goa, India.• 4th rank in HiPC 2015 Student Parallel Programming challenge.• Secured All India Rank 389 in GATE 2013, with 99.83 percentile.	
PROFESSIONAL ACTIVITIES	<ul style="list-style-type: none">• Reviewer, AISTATS 2022• Reviewer, ICML 2020	

TEACHING
ASSISTANT

- Artificial Intelligence and Machine Learning, Autumn 2021
- Automatic Speech Recognition, Spring 2021
- Foundations of Machine Learning, Autumn 2020
- Advanced Machine Learning, Spring 2020
- Web Mining I, Autumn 2019
- Web Mining II, Spring 2019
- Introduction to Machine Learning, Autumn 2018

GRADUATE
COURSES

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| <ul style="list-style-type: none"> • At IIT Bombay <ul style="list-style-type: none"> • Organization of Web Information • Advanced Machine Learning • Automatic Speech Recognition • Web Search and Mining • Foundations of Machine Learning | <ul style="list-style-type: none"> • At IIT Madras (selected courses) <ul style="list-style-type: none"> • Data Mining • Kernel Methods for Pattern Analysis • Foundations of Data Science • Indexing and Searching in Large Data-sets |
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PROJECTS

- Convolutional Neural Networks for Graph-Structured Data
(*Advanced Machine Learning, Guide: Prof. Sunita Sarawagi*) Feb 2018 to Apr 2018
- Comparison of various convolution approaches on Merck Molecular Activity Challenge dataset.
 - Explored various techniques to define the neighbourhood of a node for convolution on the graph-structure.
- Emotion Recognition from Multi-modal Information
(*Automatic Speech Recognition, Guide: Dr. Preethi Jyothi*) Aug 2017 to Nov 2017
- Explored BLSTM-RNNs for the task of Emotion Recognition on RECOLA dataset.
 - There is a delay between emotion occurring and it being labeled.
 - We showed that simple BLSTM-RNN does not learn the delay automatically, and it needs to be explicitly handled.
- A Study of Community Detection Algorithms in Large Networks
(*M.S. Thesis, Guide: Prof. B. Ravindran*) Jan 2016 to Jun 2017
- Proposed an improved scoring function to detect overlapping communities in large networks.
 - The proposed scoring function computes communities with higher mutual information and F_1 score than conductance on benchmark networks Amazon, DBLP and Youtube.
 - Published in SNAA Workshop, ASONAM-2017 conference.
- Singular Value Decomposition of Large Sparse Matrices Apr 2015 to Dec 2015
- Implementation of Incremental SVD algorithm in *gensim*, a python library for text processing.
 - Input matrix is processed in streaming fashion. Input rows or columns can be processed as they arrive from source of the data.
 - For sufficiently large matrices which can only be processed in streaming fashion, the accuracy of top 10-20% singular values is unaffected.
- Diversity aware reverse top- k queries on graphs
(*Indexing and Searching in Large Data sets, Guide: Dr. Sayan Ranu*) Aug to Nov 2014
- A technique is proposed to introduce diversity in the result of a reverse top- k query.
 - First, a reverse top- k' set S is extracted, where $k' > k$. Then, clustering is performed on S to get diversified result.

SOFTWARE SKILLS

- Python (PyTorch, TensorFlow, CVXPY)
- C, C++.
- Platform: Amazon Web Services (AWS).
- Tools: L^AT_EX.

PROFESSIONAL EXPERIENCE

Project Associate

Jan 2014 to Dec 2016

- Indian Institute of Technology, Madras.

Software Engineer

Oct 2013 to Dec 2013

- Persistent Systems Ltd., Pune.

POSITIONS OF RESPONSIBILITIES

- MS/PhD Placement Coordinator for Computer Science and Engg. at IIT Madras.
- Technical Adviser for Students' Association of Information Technology in Walchand College of Engineering, Sangli.
- Member of Walchand Linux Users' Group from June' 2011 to April' 2012, in Walchand College of Engineering, Sangli.