

Varun R Embar

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Research Interests

Knowledge Graphs, Statistical Relational Learning, Machine Learning

Education

University of California, Santa Cruz

Doctor of Philosophy in Computer Science

Santa Cruz, USA

2016 – Present

- Advisor: Prof. Lise Getoor

Indian Institute of Science

Master of Engineering in Systems Science and Automation

Bangalore, India

2010 – 2012

- Thesis: Aligned Matrix Factorization for Multitask Clustering
- Advisor: Prof. Indrajit Bhattacharya

RV College of Engineering

Bachelor of Engineering in Computer Science and Engineering

Bangalore, India

2006 – 2010

- Project: Kannada Based Software Development System
- Advisor: Prof. N K Srinath

Research Experience

UC Santa Cruz

Research Assistant

Santa Cruz, USA

September 2016 - Present

- **Aligning Product Categories using Anchor Products: (KBCOM 2018)**
 - * Proposed a way to align similar product categories extracted from breadcrumbs across various e-commerce sites
 - * Proposed technique makes use of *anchor products*, which are products present across multiple sites
 - * Probabilistic Soft Logic is used to combine various similarity and structural features extracted from anchor products to jointly infer the alignments

IBM Research - India

Software Engineer

Bangalore, India

August 2013 - August 2016

- **Estimating Properties from Network Diffusions: (ACM SIGKDD 2014)**
 - * Proposed a bayesian framework for evaluating network and cascade properties in the context of diffusion processes
 - * Properties were characterized based on how efficiently they can be computed and Monte Carlo approximation using Gibbs sampling was used when computation of property was intractable
 - * Map-Reduce version of the algorithm was implemented to handle large volume of data
- **Influence Analysis during 2014 Wimbledon Championship: (ACM SIGKDD 2015)**
 - * Built a system to compute influence scores based on Twitter feeds during the 2014 Wimbledon championship
 - * Scores were used by *All England Lawn Tennis and Croquet Club* to gain social media insight related to the tournament. The project was reported in media sites such as BBC and Yahoo News
- **Marketing Offer Design Analytics: (IBM RTE – 2014 Top Poster Award)**
 - * Modeled marketing offers that were delivered to the customer when interacting in IBM Interact
 - * Used a set of attributes such as font size, colour etc. to model offers and these were used to learning the Click Through Rates

Microsoft - India Development Center

Software Development Engineer

Bangalore, India

July 2012 - July 2013

- **Click Prediction Team, Bing Ads:**

- * Built models to predict probability of click given an ad, user and query
- * To find the right set of features large amounts of data had to be analysed using Microsoft SCOPE

Yahoo! Labs

Research Intern

Bangalore, India

May 2011 - July 2011

- **Frequent Pattern Mining:**

- * Worked on the problem of classifying spam comments using Frequent Pattern Mining
- * Implemented frequent pattern mining using Apache Pig to handle large volumes of data

Indian Institute of Science

Research Assistant

Bangalore, India

August 2010 - June 2012

- **Multitask Clustering:**

- * Proposed a solution to the problem of clustering multiple datasets, with possible related clusters, simultaneously
- * Objective function extends the k-means objective with an alignment term to enforce similarity between related clusters across tasks
- * For the problem of multitask clustering with different feature spaces across tasks, proposed a matrix tri-factorization based approach

Publications

VR Embar, G Farnadi, J Pujara, L Getoor, Aligning Product Categories using Anchor Products, **KBCOM 2018, Los Angeles**

VR Embar, I Bhattacharya, V Pandit, R Vaculin, Online Topic-based Social Influence Analysis for the Wimbledon Championships, **ACM SIGKDD 2015, Sydney**

VR Embar, RK Pasumarthi, I Bhattacharya, A Bayesian Framework for Estimating Properties of Network Diffusions, **ACM SIGKDD 2014, New York City**

S Dhamal, S Bhat, KR Anoop, VR Embar, Pattern Clustering using Cooperative Game Theory, **Centenary Conference, Electrical Engineering, 2011, Indian Institute of Science, Bangalore**

Service

Program Committee member for ACM India SIGKDD Conference on Data Sciences 2015

Achievements & Awards

Regents Fellowship: Awarded by University of California, Santa Cruz (2016)

IBM India South Asia Regional Technical Exchange -2014: Poster on *Marketing Offer Design Analytics* was selected as one of the top three posters among 500+ poster

Manager's Choice award: Awarded by IBM Research for the work on Influence Analysis during 2014 Wimbledon Championship

Graduate scholarship: Awarded by HRD Ministry of India (2010 - 2012)

Charles E Sprock scholarship: Awarded by National Semiconductors Corporation (2006 - 2010)

Skills

Languages: C, Java, Python, HTML, Bash

Operating Systems: Windows, Linux

Large Scale Processing: Hadoop