RAGHVENDRA MALL

Personal Information

Born in Kolkata, 5th March 1988

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Goal

My objective is to obtain a deep understanding of sparsity in large scale machine learning and utilize model based kernel methods for big data learning.

Work Experience

QCRI

Jul-Oct 2013 Research Associate, QCRI — Doha, Qatar

Developed primal-dual framework for feature extraction using least squares support vector machines. Developed sparse reductions to kernel spectral clustering for microarray datasets.

Reference: Dr. Mohammed El Anbari & Dr. Halima Bensmail · melanbari@sidra.org & hbensmail@qf.org.qa

Microsoft R & D

Aug-Jan 2011-12 Research Intern, Microsoft, R & D — India

Fomulated large scale micro-markets based on search queries using the BING Keyword-Advertiser graph on a distributed platform. Implemented a parallel version of power iteration clustering in combination with hierarchical clustering.

INRIA

Aug-Jan 2010-11 Research Intern, INRIA — LORIA, France

Developed algorithms for incremental clustering based on variants of growing neural gas algorithms. Applied the same to textual and biological datasets.

Reference: Prof. Jean-Charles Lamirel · jean-charles.lamirel@loria.fr

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Education

Doctorate

2012-Present KU Leuven, Belgium

Specialization: Large Scale Kernel Methods, Large Scale Social Network Analysis and Sparsity in Kernel based Models

Thesis: *Sparsity in Kernel Methods for Large Scale Machine Learning*

Description: Explored the role of sparsity in kernel methods for big data learning. Proposed algorithms including FURS, Very Sparse LSSVM, Multilevel Hierarchical KSC for big data learning. These algorithms can efficiently scale to 10^6-10^7 points on a modern laptop.

Advisor: Prof. Johan Suykens · johan.suykens@esat.kuleuven.be

Bachelors + Masters by Research in CSD

2006-2012 IIIT-Hyderabad, India

Specialization: Associative Rule Mining and Incremental Clustering

CGPA: 9.15

Thesis: *PERturbed Frequent Itemset based Classification Techniques*

Description: Proposed novel perturbed frequent itemset based classification techniques using the Apriori framework. Proposed an effective methodology to classify real-attributed market-basket data.

Advisor: Assoc. Prof. Vikram Pudi · vikram@iiit.ac.in

Selected Publications

ESANN

Jan. 2015 Ranking Overlap and Outlier Points in Data Using Soft Kernel Spectral Clustering

Authors: **Raghvendra Mall**, Rocco Langone and Johan A.K.Suykens

Jan. 2015 Identifying Intervals for Hierarchical Clustering using the Gershgorin Circle Theorem

PR Letters Authors: **Raghvendra Mall**, Siamak Mehrkanoon and Johan A.K. Suykens

In Press Very Sparse LSSVM Reductions for Large Scale Data

IEEE TNNLS Authors: **Raghvendra Mall** and Johan A.K. Suykens

Jun. 2014 Multilevel Hierarchical Kernel Spectral Clustering for Real-Life Large Scale Complex Networks

PLOS One Authors: **Raghvendra Mall**, Rocco Langone and Johan A.K. Suykens

Oct. 2013 FURS: Fast and Unique Representative Subset Selection Retaining Large Scale CommunityStructure

Social Network Analy. & Mining Authors: **Raghvendra Mall**, Rocco Langone and Johan A.K. Suykens

May 2013 Kernel Spectral Clustering for Big Data Networks

Entropy (Big Data) Authors: **Raghvendra Mall**, Rocco Langone and Johan A.K. Suykens

Oct. 2014 Representative Subsets for Big Data Learning using kNN Graphs

IEEE BigData Authors: **Raghvendra Mall**, Vilen Jumutc, Rocco Langone and Johan A.K. Suykens

Apr. 2014 Agglomerative Hierarchical Kernel Spectral Clustering for Large Scale Networks

ESANN Authors: **Raghvendra Mall**, Rocco Langone and Johan A.K. Suykens

Oct. 2013 Self-Tuned Kernel Spectral Clustering for Large Scale Networks

IEEE BigData Authors: **Raghvendra Mall**, Rocco Langone and Johan A.K. Suykens

Apr. 2013 Sparse Reductions for Fixed-Size Least Squares Support Vector Machines

PAKDD Authors: **Raghvendra Mall** and Johan A.K. Suykens

Computer Skills

Tools	Matlab, R, Weka, Gephi, lpsolve, cvx, SPSS (Basic)
Languages	Python, C, C++, Julia, C#, Unix Shell, Java (Basic)
Cloud Platform	COSMOS (C# + SQL Platform for Cloud Computing)
Operating Sys.	Ubuntu, Centos, Fedora, OpenSuse, Microsoft Windows
Miscallenous	MySQL, LaTeX, Vim, Visual Studio

Relevant Coursework

Machine Learning	Support Vector Machines, Pattern Recognition, Artificial Intelligence, Data Warehousing and Data Mining, Web Data and Knowledge Management
Theory & Algorithms	Computer Programming, Algorithms, Data Structures, Theory of Computation, Linear Algebra and Principles of Programming Languages
MOOC Courses	Machine Learning (Stanford University), Practical Machine Learning, Exploratory Data Analysis and Computing for Data Analysis (Johns Hopkins University), Social Network Analysis (University of Michigan), Networked Life (University of Pennsylvania) and Experiment for Improvement (McMaster University).

Other Information

Professional Activities

Journal Reviewer: Elsevier Neurocomputing, Pattern Recognition Letters

Professional Qualities

· Pro-active, quality conscious and result-oriented

· Conceptual thinker and problem solver

· Team player and organized work planner

· Quick learner with good communication skills

Awards

2012-15 · Doctorate Funded by European Research Council

2010 · Undergraduate Research Award

2006 · Secured Rank 70 in WBJEE, 2006.

2006 · Ranked 1772 in AIEEE, 2006.

Communication Skills

2014 · Oral Presentation at the SSCI CIDM, Orlando, Florida.

2013 · Oral Presentation at COMAD, Ahmedabad, India.

2013 · Oral Presentation at PREMI, Kolkata, India.

2013 · Oral Presentation at PAKDD, Gold Coast, Australia.

2009 · Oral Presentation at COMAD, Mysore, India.

Non-Academic Interests

Sports — Badminton, Tennis and Running

Reading Books — Fiction, Fantasy and Adventure

Movies and TV Shows — Intellectually Stimulating

References

Prof. Johan Suykens
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Dr. Mohammed El Anbari
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