

ABHAY HARPALE

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AREAS OF INTEREST

Machine Learning, Prognostics, Time-series mining, Information Retrieval, Personalization, Recommender Systems, Computational Advertising, Social Networks, Active Learning, Multi-Task Learning

EDUCATION

Carnegie Mellon University	2006-2012	Ph.D., School of Computer Science <i>Thesis:</i> Multi-Task Active Learning <i>Committee:</i> Prof. Yiming Yang (Chair), Prof. Tom Mitchell, Prof. Jaime Carbonell, Dr. Jian Zhang
Indian Institute of Technology, (IIT) Bombay	2002-2004	M.Tech., Information Technology <i>Thesis:</i> Practical Alternatives to Active Learning <i>Committee:</i> Prof. Sunita Sarawagi (Chair), Prof. Soumen Chakrabarti, Dr. Anand Deshpande
SGGS College of Engg. & Tech., Nanded	2002	B.Engg., Computer Science

EXPERIENCE

GE Global Research

2012 – present

Senior Research Scientist, San Ramon, CA

Anomaly detection for aviation, power and water, renewable energy, and nuclear energy.

Employee performance summarization

Training curriculum, jobs, roles, and skillset recommendation

Jet engine prognostics

Oil and gas pipeline diagnostics

Gas turbine degradation modeling and root cause analysis

Time-series classification

Flight arrival estimation

Relevance-based sentiment analysis

Topics: Prognostics, text-mining, probabilistic graphical models, topic models, time-series mining

Carnegie Mellon University

2006 – 2012

Graduate Research Assistant, Pittsburgh, PA

Never Ending Language Learner: with Prof. Tom Mitchell

2011 – 2012

User-centric Adaptive and Collaborative Filtering: with Prof. Yiming Yang

2006 – 2012

Topics: active learning, adaptive filtering, collaborative filtering, personalized search, classification, protein identification

Xurmo

2011 – 2012

Research Consultant, Bangalore, India

Topics: personalized enterprise search, expert discovery, sentiment analysis

Yahoo

May 2010 – August 2010

Research Intern, Advertising Sciences Lab, Santa Clara, CA

Topics: Personalized click-response prediction using user-generated social content for behavioral Ad-targeting

Intel

August 2004 – July 2006

Software Engineer, Technology Management Team, Bangalore, India

Topics: Smart e-manuals for information sharing and trouble shooting, tutoring workflow management systems

TEACHING EXPERIENCE

Information Retrieval (11-741)

Spring 2011

Teaching Assistant for Prof. Jamie Callan and Prof. Yiming Yang

School of Computer Science, Carnegie Mellon University

Duties: taught recitations, held office hours, graded exams and homeworks

Search Engines and Web Mining (15-493)

Fall 2009

Teaching Assistant for Prof. Jamie Callan and Prof. Yiming Yang

Computer Science Department, Carnegie Mellon University

Duties: held office hours, graded examinations and homeworks

SERVICE

Journal Reviewer: Pattern Recognition, Transactions on the Web. Transactions on Cybernetics,

Conference Reviewer: ICML, SDM SIGIR

Organizer: Student Seminar Series at School of Computer Science, Carnegie Mellon University.

PROGRAMMING EXPERTISE

Languages: (Present) Python

Languages: (Past) Perl, Matlab, PIG, Java, SQL, Php, AJAX, JavaScript

Frameworks: Hadoop, MapReduce, OpenMP, MPI, Symfony, GraphLab, Spark, Tensorflow, Keras

Operating Systems: Linux, Windows, Mac OSX

ACHIEVEMENTS

- Impact award, GE Global Research: 2018
 - Deliver in an uncertain world, GE Global Research: 2017
 - Empower and inspire each other award, GE Global Research: 2015, 2017
 - Above and Beyond award, GE Global Research: 2013, 2014
 - Ranked among **top one percentile** (all over India) in National Center for Software Technology (NCST) examination, 2002
 - Ranked among **top two percentile** (all over India) in Graduate Aptitude Test (GATE) examination, 2002
 - General Secretary (highest elected student post) of the student council, 2001-2002.
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PERSONAL DETAILS

Citizenship: India

Resident status: Permanent resident

Languages: English, Marathi (native), Hindi

PUBLICATIONS

- * Abhay Harpale and Abhishek Srivastav: A textual transform of multivariate timeseries for prognostics. CoRR abs/1709.06669 (2017)
- * Evangelos E. Papalexakis, U. Kang, Christos Faloutsos, Nicholson'slas D. Sidiropoulos, Abhay Harpale: Large Scale Tensor Decompositions: Algorithmic Developments and Applications. IEEE Data Eng. Bull. (3): 59-66 (2013)
- * U Kang, Evangelos Papalexakis, Abhay Harpale, and Christos Faloutsos. GigaTensor: Scaling Tensor Analysis Up By 100 Times - Algorithms and Discoveries. KDD 2012.
- * Abhay Harpale and Yiming Yang. Multi-Task Active Learning for Hierarchical Classification. (under review)
- * Abhay Harpale and Yiming Yang. Transferable Active Learning for Heterogeneous Tasks. (under review)

- * Abhay Harpale, Yiming Yang, Siddharth Gopal, Daqing He and Zhen Yue. CiteData: A new multi-faceted dataset for evaluating personalized search performance. CIKM 2010.
- * Abhay Harpale and Yiming Yang. Active Learning for Multi-Task Adaptive Filtering. ICML 2010.
- * Zhen Yue, Abhay Harpale, Daqing He, Jonathan Grady, Yiling Lin, Jon Walker, Siddharth Gopal, and Yiming Yang. CiteEval for Evaluating Personalized Social Web Search. SIGIR 2009, In the Future of IR Evaluations workshop.
- * Yiming Yang, Abhay Harpale, and Subramaniam Ganapathy. Protein Identification from Tandem Mass Spectra with Probabilistic Language Modeling. ECML-PKDD 2009.
- * Yiming Yang, Subramaniam Ganapathy, and Abhay Harpale. Protein Identification as an Information Retrieval Problem. SIGIR 2009.
- * Abhay Harpale, Yiming Yang. Personalized Active Learning for Collaborative Filtering. SIGIR 2008.
- * Yiming Yang, Abhimanyu Lad, Ni Lao, Abhay Harpale, Bryan Kisiel, Monica Rogati, Jian Zhang, Jaime Carbonell, Peter Brusilovsky, Daqing He: Utility-based information distillation over temporally sequenced documents. SIGIR 2007
- * Shantanu Godbole, Abhay Harpale, Sunita Sarawagi, Soumen Chakrabarti. Document classification through interactive supervision of document and term labels. ECML-PKDD 2004
- * Shantanu Godbole, Abhay Harpale, Sunita Sarawagi, Soumen Chakrabarti. HIClass: Hyper Interactive text Classification by interactive supervision of document and term labels. ECML-PKDD 2004

PATENTS

- * Abhay Harpale, Jobin James, Abhishek Srivastav, and Jianbo Yang. A method for detection of HVAC anomalies and failures at the component level. Filed 2017.
- * Abhay Harpale. Temporal Transduction for automatic prognostics, diagnosis and change point detection. Filed 2016.
- * Helena Goldfarb, Abhay Harpale, Achalesh Pandey, and Huang Hao. Machine Learning Templates in Digital Twin Framework. Filed 2016.
- * Abhay Harpale, Shiva Kasiviswanathan, Anuj Tewari, and Jobin James. Automatic summarization of employee performance. Filed 2015.
- * Abhay Harpale, Hao Huang, Achalesh Pandey, and Alex Narkaj. System and method for unsupervised anomaly detection on industrial timeseries data. Filed 2015.
- * Abhay Harpale, Abhishek Srivastav, and Mohak Shah. A Text-Mining approach for diagnostics and prognostics using temporal multi-dimensional sensor observations. Filed 2014.