

Harikrishna Narasimhan

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RESEARCH INTERESTS	Machine Learning, Learning Theory, Optimization, Applications in Life Sciences	
EDUCATION	Indian Institute of Science, Bangalore	2012 - Present
	Ph.D. in Computer Science CGPA: 7.5/8 Advisor: Prof. Shivani Agarwal	
	Indian Institute of Science, Bangalore	2010 - 2012
	M.E. Computer Science and Engineering Thesis Title: <i>A structural SVM based approach for optimizing partial AUC</i> CGPA: 7.9/8 (<i>Best Student in M.E. CSE</i>)	
	College of Engineering, Guindy, Anna University, Chennai	2006 - 2010
	B.E. Computer Science and Engineering CGPA: 9.94/10 (<i>Best Outgoing Student with Gold Medal</i>)	
SELECTED PUBLICATIONS	Agarwal, A., Narasimhan, H., Kalyanakrishnan, S., Agarwal, S. GEV-canonical regression for accurate binary class probability estimation when one class is rare. In <i>Proceedings of the International Conference on Machine Learning (ICML)</i> , 2014.	
	Narasimhan, H. and Agarwal, S. On the relationship between binary classification, bipartite ranking, and binary class probability estimation. In <i>Advances in Neural Information Processing Systems (NIPS)</i> , 2013.	
	Narasimhan, H. and Agarwal, S. SVM_{pAUC}^{tight}: A new support vector method for optimizing partial AUC based on a tight convex upper bound. In <i>Proceedings of the ACM SIGKDD Conference on Knowledge, Discovery and Data Mining (KDD)</i> , 2013.	
	Menon, A. K., Narasimhan, H., Agarwal, S. and Chawla, S. On the statistical consistency of algorithms for binary classification under class imbalance. In <i>Proceedings of the International Conference on Machine Learning (ICML)</i> , 2013.	
	Narasimhan, H. and Agarwal, S. A structural SVM based approach for optimizing partial AUC. In <i>Proceedings of the International Conference on Machine Learning (ICML)</i> , 2013.	
REVIEWER SERVICE	IEEE Transactions on Knowledge and Data Engineering, IEEE Transactions on Cybernetics, Sadhana – Academy Proceedings in Engineering Sciences	
AWARDS AND ACHIEVEMENTS	<ul style="list-style-type: none">• Google India PhD Fellowship in Machine Learning, 2013.• Shell India Computational Talent Prize 2013 (SICTP) Gold Award for the paper ‘SVM_{pAUC}^{tight}: A new support vector method for optimizing partial AUC based on a tight convex upper bound’, KDD 2013.• NIPS 2013 student travel award for participating in NIPS 2013.• KDD 2013 student volunteer award for participating in KDD 2013.	

- ICML 2013 student volunteer scholarship for participating in ICML 2013.
- Travel grant from Microsoft Research India for presenting a paper at ICML 2013.
- Computer Society of India (Bangalore Chapter) Medal for best M.E. student in computer science, Indian Institute of Science, 2012.
- Secured an all India rank of 4 (out of around 100,000 candidates) in Graduate Aptitude Test in Engineering (GATE) 2010.
- Gold medal for first rank in B.E. CSE, College of Engineering, Guindy, 2011.
- Certificate of Merit from South Indian Chamber of Commerce and Industry (SICCI) for best student in Computer Science and Engineering at Anna University, 2011.
- 1957 Batch Students Endowment Prize for best passed out student on merit cum means in B.E. programme, College of Engineering, Guindy, 2011.
- Dr. V.C. Kulandaiswamy Endowment Prize for top ranker among the passed out students of all the full time B.E. programmes, College of Engineering, Guindy, 2011.
- 1992-93 Students Union and Arts Society Bi-centenary Commemoration Endowment Prize for best passed out student, College of Engineering, Guindy, 2011.
- Namakkal Kavingnar Endowment Prize for best passed out student on merit cum means in B.E. programme, College of Engineering, Guindy, 2011.
- Rajalakshmi-Ramakrishna Reddy Endowment for best outgoing student in B.E. CSE, Alumni Association, College of Engineering, Guindy, 2011.
- Alumni Association 1995 Endowment I for General Proficiency in Computer Science, Alumni Association, College of Engineering, Guindy, 2011.
- Khan Bahadur Abdul Latif Endowment for best final year student, College of Engineering, Guindy, 2010.
- Namakkal Kavingnar Endowment for top ranker from I to IV year of B.E. programme, College of Engineering, Guindy, 2010.
- P. Chandrasekaran Memorial Endowment for best outgoing final year student in B.E. CSE, College of Engineering, Guindy, 2010.
- Ramana Endowment for best outgoing student in academic excellence in B.E CSE, College of Engineering, Guindy, 2010.
- Colgate Gold Medal Endowment for first rank holder in B.E. CSE, College of Engineering, Guindy, 2010.
- 1954 Alumini Golden Jubilee Endowment for maximum CGPA in III year of B.E. programme, Alumni Association, College of Engineering, Guindy, 2009.
- 1951 Alumni Golden Jubilee Endowment for maximum marks in II year of B.E. programme, Alumni Association, College of Engineering, Guindy, 2008.
- Late Thiru A Muralitharan Endowment for highest mark in IV semester of B.E. programme, College of Engineering, Guindy, 2008.
- 1956 Silver Jubilee Prize for maximum CGPA in first year of B.E. programme, Alumni Association, College of Engineering, Guindy, 2007.
- Engineering College Gold Medal for first rank in the first year of B.E. programme, College of Engineering, Guindy, 2007.
- Secured a rank of 27 (out of around 130,000 candidates) in the Tamil Nadu Professional Courses Entrance Examination 2006.

TEACHING
EXPERIENCE

Teaching Assistant
[E0 270 Machine Learning](#) (Spring 2013)

INTERNSHIP
EXPERIENCE

Research Intern at Microsoft Research, Bangalore (June 16, 2014 – August 8, 2014)
Mentor: Prateek Jain
Worked on efficient learning algorithms for non-decomposable performance measures.

Research Intern at Indian Institute of Technology, Madras (May – July, 2009)
Mentor: Prof. C. Pandu Rangan
Worked on applications of game theory to network security.

TALKS	<p>“Support vector algorithms for optimizing the partial area under the ROC curve”, 1st IKDD Conference on Data Sciences (CoDS), Delhi, March 2014. (Invited Talk)</p> <p>“On the relationship between binary classification, bipartite ranking, and binary class probability estimation”, Neural Information Processing Systems (NIPS), Lake Tahoe, December 2013. (Spotlight presentation)</p> <p>“On the relationship between binary classification, bipartite ranking, and binary class probability estimation”, CSA Perspective Seminars, Indian Institute of Science, Bangalore, November 2013.</p> <p>“Learning from binary labels: A plethora of performance measures, a plethora of algorithms needed”, SAP Labs, Bangalore, October 2013.</p> <p>“Learning from binary labels: A plethora of performance measures, a plethora of algorithms needed”, Microsoft Research India, Bangalore, October 2013.</p> <p>“Support vector algorithms for optimizing the partial area under the ROC curve”, Amazon Machine Learning Team, Bangalore, August 2013.</p> <p>“SVM_{pAUC}^{tight}: A new support vector method for optimizing partial AUC based on a tight convex upper bound”, ACM SIGKDD Conference on Knowledge, Discovery and Data Mining (KDD), Chicago, August 2013.</p> <p>“Support vector algorithms for optimizing the partial area under the ROC curve”, 1st Indian Workshop on Machine Learning (iWML), IIT Kanpur, July 2013.</p> <p>“A structural SVM based approach for optimizing partial AUC”, International Conference on Machine Learning (ICML), Atlanta, June 2013.</p> <p>“On the statistical consistency of algorithms for binary classification under class imbalance”, International Conference on Machine Learning (ICML), Atlanta, June 2013. (Spotlight presentation)</p> <p>“A structural SVM based approach for optimizing partial AUC”, <i>Yahoo!</i> Labs IISc Student Seminar (YLISS), <i>Yahoo!</i> Labs, Bangalore, March 2013.</p>	
GRADUATE COURSES	<p>Fall 2010</p> <p>Computational Methods of Optimization Probability and Statistics Design and Analysis of Algorithms Automata Theory and Computability</p> <p>Fall 2011</p> <p>Database Management Systems Statistical Learning Theory (Audit)</p> <p>Fall 2012</p> <p>Linear Algebra and Applications Optimization for Machine Learning</p>	<p>Spring 2011</p> <p>Pattern Recognition and Neural Networks Probabilistic Graphical Models Topics in Machine Learning Game Theory</p> <p>Spring 2012</p> <p>Computer Graphics</p> <p>Spring 2012</p> <p>Real Analysis (Audit)</p>
GRADUATE COURSE PROJECTS	<ul style="list-style-type: none"> • Cutting-plane training of sparse multivariate support vector machines. • Incentive compatible algorithms for learning from multiple rational agents. • Visualizing Mars terrain using level of detail management techniques. • Constrained coloring of plan diagrams in Picasso query optimizer visualizer. • Clustering based approaches for collaborative filtering. 	
PROGRAMMING SKILLS	C, C++, Matlab, Java, Shell Script, L ^A T _E X	

ORGANIZATIONAL ACTIVITIES	<ul style="list-style-type: none"> • Lead volunteer for the Indo-US Lectures Week in Machine Learning, Game Theory and Optimization (January 7-10, 2014). • One of the organizers of the CSA Undergraduate Summer School 2013 for undergraduate computer science students (June 24-28, 2013). • One of the organizers of the TwitMiner 2013 machine learning contest, held as a part of the CSA Open Days 2013 (March 1-15, 2013).
REFERENCES	Available upon request.