

# Yeshwanth Cherapanamjeri

*Ph.D Applicant in Machine Learning*

CONTACT INFORMATION	Microsoft Research India #9, Lavelle Road Bangalore, India - 560001	<a href="https://yeshwanth94.github.io">https://yeshwanth94.github.io</a> <a href="mailto:yeshwanthreddy@gmail.com">yeshwanthreddy@gmail.com</a> +91-9769532063
RESEARCH INTERESTS	Learning Theory, Optimization, High Dimensional Statistics	
CURRENT POSITION	<b>Microsoft Research India</b> <i>Research Fellow</i>	(June 2015 - Present) Advisors: Dr. Prateek Jain and Dr. Praneeth Netrapalli
EDUCATION	<b>Indian Institute of Technology Bombay</b> B. Tech with Honors in Computer Science and Engineering Minor in Applied Statistics and Informatics CGPA: 9.31 ( <i>Ranked among the top 10% of the department</i> )	(July 2011 - May 2015)
PUBLICATIONS	<b>Thresholding based Efficient Outlier Robust PCA</b> <b>Yeshwanth Cherapanamjeri</b> , Prateek Jain, Praneeth Netrapalli Thirtieth Conference on Learning Theory (COLT '17) ArXiv Version: <a href="https://arxiv.org/abs/1702.05571">https://arxiv.org/abs/1702.05571</a> <b>Nearly Optimal Robust Matrix Completion</b> <b>Yeshwanth Cherapanamjeri</b> , Kartik Gupta, Prateek Jain Thirty-Fourth International Conference on Machine Learning (ICML '17) ArXiv Version: <a href="https://arxiv.org/abs/1606.07315">https://arxiv.org/abs/1606.07315</a>	
RESEARCH EXPERIENCE	<b>Robust Matrix Completion</b> <i>Advisor: Dr. Prateek Jain, Microsoft Research India</i>	(June 2015 - May 2016)
	<ul style="list-style-type: none"><li>• Formulated Robust Matrix Completion as the problem of recovering a sparsely-corrupted low rank matrix by observing a small number of entries from the matrix</li><li>• Proposed an efficient algorithm based on singular value projection and hard thresholding</li><li>• Established the <i>information-theoretic optimality</i> of the algorithm in the fraction of corruptions</li><li>• Established the near-<i>optimality</i> of sample and run-time complexities</li><li>• Empirically evaluated the algorithm on synthetic data and the foreground-background separation task where we obtained 10× speedup over existing methods</li></ul>	
	<b>Non Convex Outlier-Robust PCA</b> <i>Advisors: Dr. Prateek Jain and Dr. Praneeth Netrapalli, Microsoft Research India</i>	(June 2016 - Present)
	<ul style="list-style-type: none"><li>• Proposed first provably near-linear time algorithm for Outlier-Robust PCA</li><li>• Proved the <i>information-theoretic optimality</i> of the algorithm in the fraction of outliers tolerated</li><li>• Empirically evaluated the proposed algorithm on a variety of anomaly detection datasets</li></ul> <p>We are currently exploring efficient streaming variants of our algorithm for deployment on low resource devices and preparing our results for a publication.</p>	
	<b>Entity Linking with Hierarchical Non-Parametric Topic Models</b> <i>Advisors: Prof. Ganesh Ramakrishnan and Prof. Soumen Chakrabarti, IIT Bombay</i>	(May 2014 - May 2015)
	<ul style="list-style-type: none"><li>• Worked on the use of hierarchical non-parametric topic models for entity linking</li><li>• Proposed a novel extension of existing methods to alleviate the issue of No Attachment phrases</li><li>• Proposed optimizations to existing Gibbs sampling techniques to scale to large corpora like Wikipedia</li><li>• Evaluated the proposed algorithm on corpora constructed from Wikipedia and Yago!</li></ul> <p>The report can be found here: <a href="https://yeshwanth94.github.io/docs/elReport.pdf">https://yeshwanth94.github.io/docs/elReport.pdf</a>.</p>	

**Contour and Junction Detection in Architectural Images**

(May 2013 - July 2013)

*Advisor: Prof. Marcus Magnor, TU Braunschweig*

- Implemented and evaluated the *gPB* algorithm for detecting contours on natural images
- Proposed domain specific extensions to *gPB* to extract junction points based on extracted contours
- Integrated into a user-guided tool to reconstruct the façade of a building from multiple images

SCHOLASTIC ACHIEVEMENTS	Secured <b>All India Rank 67</b> in <b>IIT-JEE</b> amongst more than 500,000 candidates (2011)
	Declared successful at the <b>Indian National Mathematical Olympiad (INMO)</b> (2011, 2010)
	Awarded <b>Kishore Vaigyanik Protsahan Yojana Scholarship</b> with All India Rank 13 (2011)
	Among the top 1% students in India in the Indian National Chemistry <i>and</i> Physics Olympiads (2011)
	Qualified for the regional rounds of the ACM ICPC (2013, 2014)
TALKS & SEMINARS	Entity Linking with Hierarchical Non-Parametric Topic Models (Mar 2015) <i>Advisor: Prof. Ganesh Ramakrishnan, Microsoft Research India &amp; IIT Bombay</i>
	Stability and Generalization in Machine Learning (Sep 2014) <i>Advisor: Prof. Saketha Nath J., IIT Bombay</i>
	Hopfield Networks and Applications (Mar 2014) <i>Advisor: Prof. Pushpak Bhattacharya, IIT Bombay</i>
	Contour and Junction Detection in Architectural Images (July 2013) <i>Advisor: Prof. Marcus Magnor, TU Braunschweig</i>
PROFESSIONAL SERVICE	<b>External Reviewer:</b> Thirty-First AAAI Conference on Artificial Intelligence
	<b>Teaching Assistant</b> for MA 214 - Numerical Analysis: Mentored a group of 30 students part of an introductory course on the analysis of commonly used numerical algorithms in scientific computing
TECHNICAL SKILLS	Programming Languages: C++, Java, Python, Scheme
	Numerical Computing: Matlab, Octave, R
	Miscellaneous: Spark, L <sup>A</sup> T <sub>E</sub> X, Prolog, MySQL
EXTRA CURRICULARS	Completed beginner level Mandarin Chinese course offered by IIT Bombay with distinction
	Completed one year guitar course offered by the National Sports Organization
	Awarded Brown belt in Karate by Kokino Shito-Ryu School of Karate