

## RAMESH M. NALLAPATI

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### Research Interests

Machine Learning and its applications to Information Retrieval, Information Extraction and other Data-mining problems.

### Education

- Post Doctoral Fellowship, Department of Machine Learning  
CARNEGIE MELLON UNIVERSITY  
September 2006 - March 2008  
Pittsburgh, PA
- Ph.D., Department of Computer Science  
UNIVERSITY OF MASSACHUSETTS, AMHERST  
(GPA: 4.00)  
September 2000 - June 2006  
Amherst, MA
- Master of Science (M.S.) in Computer Science  
UNIVERSITY OF MASSACHUSETTS, AMHERST  
(GPA: 4.00)  
September 2000-February 2004  
Amherst, MA
- Master of Science (M.S.) in Mechanical Engineering  
UNIVERSITY OF MASSACHUSETTS, AMHERST  
(GPA: 3.87)  
September 1998- May 2001  
Amherst, MA
- Bachelor of Technology (B.Tech.) in Mechanical Engineering  
INDIAN INSTITUTE OF TECHNOLOGY, BOMBAY  
July 1994-May 1998  
Mumbai, India

### Work Experience

- *Research Associate*  
STANFORD UNIVERSITY  
Advisers: **Prof. Chris Manning**  
April '08 -  
Stanford, CA  
Conducting Research on applying Machine Learning techniques to analyze Intellectual Property Litigation documents from all U.S. Federal District courts. Also conducting research on modeling readability metrics for text as part of DARPA's Machine Reading project.

- *Post Doctoral Fellow* September '06 - August'08  
 CARNEGIE MELLON UNIVERSITY Pittsburgh, PA  
 Advisers: **Prof. John Lafferty** and **Prof. William Cohen**.  
 Conducted Research on applying latent topic modeling as an unsupervised method for mining patterns in large document collections. Also built parallel and distributed implementations of LDA in the process.
- *Research Assistant* Jan'01 - July'06.  
 CENTER FOR INTELLIGENT INFORMATION RETRIEVAL UMass Amherst  
 Adviser: **Prof. James Allan**  
 Performed research in applying machine learning techniques for information retrieval. Built advanced language models and discriminative models for information retrieval in the early part. As part of my thesis, proposed a novel distribution called Smoothed-Dirichlet, to model text.
- *Research Intern* June'04-September'04  
 MICROSOFT RESEARCH Cambridge, UK  
 Mentors: **Dr. Stephen Robertson, Dr. Thomas Minka** and **Dr. Hugo Zaragoza**  
 Developed the smoothed-Dirichlet distribution for text that forms part of my thesis.
- *Research Intern* June'03-August'03  
 PALO ALTO RESEARCH CENTER Palo Alto, CA, USA  
 Mentors: **Dr. Francine Chen, Dr. Ayman Farahat, Dr. Annie Zaenon**  
 Worked on topic-wise segmentation of narratives. Used SVMs to classify paragraph boundaries into segments or non-segments using several features such as PLSA topics, named-entity chains, word similarity, punctuation, etc., on either side of the paragraph boundary.

## Refereed Publications

1. Ramesh Nallapati, Mihai Surdeanu and Christopher Manning, **CorrActive Learning: learning from noisy data using human interaction**, *IJCAI workshop in Intelligence and Interaction*, 2009.
2. Daniel Ramage, David Hall, Ramesh Nallapati and Christopher Manning, **Labeled LDA: a supervised topic model for credit attribution in multi-labeled corpora**, *EMNLP*, 2009.
3. Ramesh Nallapati and Christopher Manning, **Legal Docket Classification: Where Machine Learning stumbles**, *EMNLP*, 2008.
4. Ramesh Nallapati, William Cohen, Amr Ahmed and Eric Xing, **Joint Latent Topic models for text and citations**, *KDD*, 2008.
5. Andrew Arnold, Ramesh Nallapati and William, **Exploiting feature hierarchy for Transfer learning in named-entity recognition**, *ACL*, 2008.
6. Ramesh Nallapati and William Cohen, **Link-PLSA-LDA: an unsupervised technique for modeling topics and influence of blogs**, *International Conference of Weblogs and Social Media*, 2008.
7. Ramesh Nallapati, William Cohen, Susan Dittmore, John Lafferty and Kin Ung, **Multi-scale Topic Tomography**, *ACM KDD*, 2007.
8. Ramesh Nallapati, Amr Ahmed, William Cohen and Eric Xing, **Sparse Word Graphs: A scalable algorithm for capturing word-correlations in topic models**, *ICDM Workshop on high performance data mining*, 2007.
9. Ramesh Nallapati, William Cohen, John Lafferty, **Parallelized variational EM for Latent Dirichlet Allocation: An experimental evaluation of speed and scalability**, *ICDM workshop on high performance data mining*, 2007.
10. Andrew Arnold, Ramesh Nallapati and William Cohen, **A comparative study of methods for transfer learning**, *ICDM workshop on mining and management of biological data*, 2007.

11. Ramesh Nallapati, Ao Feng, Fuchun Peng and James Allan, **Event Threading within News Topics**, *ACM Conference on Information and Knowledge Management*, pp.446-453, 2004.
12. Ramesh Nallapati, **Discriminative Models for Information Retrieval**, *ACM Special Interest Group in Information Retrieval*, pp. 64-71, 2004.
13. Ramesh Nallapati and James Allan, **An Adaptive Local Dependency language Model: Relaxing the Naïve Bayes Assumption**, *Workshop on Mathematical and Formal Models in IR, ACM Special Interest Group in Information Retrieval*, 2003.
14. Ramesh Nallapati, Bruce Croft and James Allan, **Relevant Query Feedback in Statistical Language Modeling**, *ACM Conference on Information and Knowledge Management*, pp.560-563, 2003.
15. Ramesh Nallapati, **Semantic Language Models for Topic Detection and Tracking**, *Student Research Workshop, Human Language Technologies - North American Association of Computational Linguistics*, 2003.
16. Ramesh Nallapati and James Allan, **Capturing Term Dependencies using a Sentence Tree based Language Model**, *ACM Conference on Information and Knowledge Management*, pp.383-390, 2002.

## Unrefereed Publications

1. Ramesh Nallapati, **The Smoothed Dirichlet distribution: explaining KL-divergence ranking in IR**, *Ph.D. thesis*, UMass Amherst, 2006. Committee: Prof. James Allan (Chair, CS, UMass), Prof. Bruce Croft (CS, UMass), Prof. Sridhar Mahadevan (CS, UMass), Prof. John Staudenmayer (Statistics, UMass), Dr. Thomas Minka (Microsoft Research, Cambridge, UK).
2. Ramesh Nallapati, Thomas Minka and Stephen Robertson, **Smoothed Dirichlet Distribution: a new building block for topical models**. Available as *CIIR technical report IR-461*.
3. James Allan, Victor Lavrenko and Ramesh Nallapati, **UMass at TDT-2002**, *Topic Detection and Tracking workshop*, 2002.
4. Ramesh Nallapati, James Allan and Sridhar Mahadevan, **Extraction of key-words from news stories**, *CIIR Technical report IR-345*.

## Honors & Awards

- My paper *Multiscale Topic Tomography* was considered as a candidate for the best-paper award at KDD 2007.
- Won a student travel award at SIGIR 2004.
- Won a student travel award at CIKM 2003.
- Won a scholarship to attend the NAACL summer workshop in language technologies, Johns Hopkins University, 2002.
- Was ranked in the top 0.7% in the All India Joint Entrance Examination 1994 for admission to IIT (Indian Institute of Technology), out of approximately 100,000 appeared.

## Peer Review

- Served on the Program Committees of ICML 2009 and NIPS 2009.
- Served on the Program Committees of KDD 2008, ICML 2008, NIPS 2008 and AISTATS 2008.
- Reviewer for one or more papers in the following journals: ACM TOIS, IEEE TKDE, AIJ, IR

## Talks

List of talks excluding conference presentations of my papers.

- **Optimization methods for L1-regularized Logistic Regression**, tutorial at NLP Lunch, Stanford University, June 2009.
- **Parallelized Inference techniques for Machine Learning Models**, tutorial at Hewlett-Packard Labs, Palo Alto, CA, April 2009.
- **Variational Inference for Bayesian networks**, tutorial at NLP Lunch, Stanford University, February 2009.
- **Fast and Scalable Support Vector Machines**, tutorial at NLP Lunch, Stanford University, December 2008.
- **Generative topic models for community analysis**, Guest lecture in *Social Media Analysis*, a CMU Machine Learning grad course, Fall 2007.
- **Smoothed Dirichlet Distribution for Information Retrieval**, presented at Google, Mountainview, CA, March, 2006.
- **Smoothed Dirichlet Distribution for Information Retrieval**, presented at Yahoo Research Labs, Birbank, CA, November, 2005.
- **Classification models for Information Retrieval**, presented at Indian Institute of Information Technology, Hyderabad, India, June 2005.
- **Classification models for Information Retrieval**, presented at Indian Institute of Technology, Bombay, June 2005.

## Professional Activities

- Assisted in the *Probabilistic Graphical Models* course at CMU. Tasks include designing course material, assisting students and occasional class-room teaching.
- Elected Graduate Representative in the Computer Science Department at UMass, Jan'05-Jan'06. Responsibilities included organizing faculty seminars and serving as a liaison between faculty and students.

## Relevant Course Work

- *Information Retrieval*: Information Retrieval, Statistical Natural Language Processing seminar, Language modeling seminar, Information Extraction, Advanced Information Retrieval seminar.
- *Machine Learning*: Machine Learning, Manifold learning methods, Statistical Machine Learning(CMU), Probabilistic Graphical Models(CMU), Advanced probabilistic Graphical Models (CMU).