Manas A. Pathak

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Education	**PhD in Language & Information Technologies**	*April 2012*
	School of Computer Science, Carnegie Mellon University	*GPA: 3.90*

  – **Advisor:** Prof. Bhiksha Raj
  – **Thesis:** Privacy-Preserving Machine Learning for Speech Processing

Masters in Language Technologies   *May 2009*
School of Computer Science, Carnegie Mellon University   *GPA: 3.70*
  – **Advisor:** Prof. Eric H. Nyberg
  – **Thesis:** Machine Learning Techniques for Domain Adaptation

Bachelor of Technology in Computer Science and Engineering *Apr 2006*
Visvesvaraya National Institute of Technology, Nagpur, India   *GPA: 8.91, Rank #1*

Experience

Research Scientist, Adchemy, Inc., Foster City, CA   *May 2012 - present*
Working on developing the next-generation online advertising platform.
  – Developing state-of-the-art statistical modeling and machine learning algorithms in a broad range of online advertising contexts.
  – Implementing sophisticated data analysis methods to automate existing processes and enable new capabilities.
  – Building production ready, fully scalable prototypes to test new algorithms.

Intern, Palo Alto Research Center (PARC)   *May - Aug 2011*
Worked with Dr. Richard Chow and Dr. Elaine Shi on efficient privacy-preserving recommender systems and location-based targeted advertising.

Intern, Mitsubishi Electric Research Labs, Cambridge, MA *May - Aug 2010*
Worked with Dr. Shantanu Rane on privacy-preserving machine learning and speech recognition.

Consultant, MyCaption.com, Inc., Sunnyvale, CA   *Jun - Aug 2009*
Worked on adaptive speech recognition technologies for smartphone applications.

Intern, IBM T.J. Watson Research Center   *May - Aug 2008*
Worked on domain adaptation of answer ranking algorithms with Dr. Eric Brown and the IBM Watson question answering system.

Research Assistant, IIT Bombay   *May - Dec 2006*
Worked with Dr. Soumen Chakrabarti on information retrieval for personal information management systems.

Skills

Languages:	Java, C/C++, Python, Perl, Javascript, R, Matlab, bash scripting
Databases:	PostgreSQL, MySQL
Applications:	Eclipse, Maven, Subversion, Emacs, Weka

Awards & Honors

  – Springer best PhD thesis award, 2012
  – Amazon Web Services Research Grant, 2011.
  – VNIT Institute Medal & academic excellence prize.

Patents

1. Shantanu Rane, Manas A. Pathak, Bhiksha Raj. "Differentially private aggregate classifier for multiple databases." U.S. Patent 2012/0143922 A1, issued Jun 7, 2012.

2. Shantanu Rane, Wei Sun, Manas A. Pathak, Bhiksha Raj. "Privacy-Preserving Probabilistic Inference based on Hidden Markov Models." U.S. Patent 2012/0254612 A1, issued Oct 4, 2012.

3. Manas Pathak, Richard Chow, Runting Shi, and Cong Wang. "Privacy-Preserving Collaborative Filtering." U.S. Patent application no. 13/314,748, filed Dec 2011.

4. Kurt Partridge, Ersin Uzun, Cong Wang, and Manas Pathak. "Privacy-Preserving Behavior Targeting for Digital Coupons." U.S. Patent application no. 13/329,020, filed Dec 2011.

Publications

Journal Articles

1. Manas A. Pathak, Bhiksha Raj, Shantanu Rane and Paris Smaragdis. "Privacy-Preserving Speech Processing." IEEE Signal Processing Magazine, Special Issue on Signal Processing in the Encrypted Domain, 2013 (to appear). [Impact Factor: 4.066]

2. Manas A. Pathak and Bhiksha Raj. "Privacy-Preserving Speaker Verification and Identification using Gaussian Mixture Models." IEEE Transactions of Audio, Speech, and Language Processing, 2012. [Impact Factor: 1.498]

3. Manas Pathak and Bhiksha Raj. "Large Margin Multiclass Gaussian Mixture Models with Differential Privacy." IEEE Transactions on Dependable & Secure Computing, 2012. [Impact Factor: 1.14]

4. Manas Pathak and Bhiksha Raj. "Efficient Protocols for Principal Eigenvector Computation over Private Data." Transactions on Data Privacy, 2011.

5. Manas Pathak and Vivek Thakre. "Intelligent Web Monitoring – A hypertext mining based approach." Journal of the Indian Institute of Science. vol. 86, 2006.

Conference and Workshop Papers

1. Richard Chow, Manas Pathak, Cong Wang. "A Practical System for Privacy-Preserving Collaborative Filtering." International Workshop on Privacy in Social Data (PinSoDa) at ICDM, 2012.

2. Manas Pathak, Jose Portelo, Bhiksha Raj, Isabel Trancoso. "Privacy-preserving speaker authentication." Information Security Conference (ISC), 2012.

3. Kurt Partridge, Manas Pathak, Ersin Uzun and Cong Wang. "PiCoDa: Privacy-preserving Smart Coupon Delivery Architecture." Workshop on Hot Topics in Privacy Enhancing Technologies, 2012.

4. Manas Pathak and Bhiksha Raj. "Privacy Preserving Speaker Verification as Password Matching." ICASSP 2012.

5. Manas Pathak and Bhiksha Raj. "Privacy-Preserving Speaker Verification using Adapted GMMs." Interspeech 2011.

6. Manas Pathak, Shantanu Rane, Wei Sun and Bhiksha Raj. "Privacy-Preserving Probabilistic Inference with Hidden Markov Models." ICASSP 2011.

7. Manas Pathak, Shantanu Rane and Bhiksha Raj. "Multiparty Differential Privacy via Aggregation of Locally Trained Classifiers." Neural Information Processing Systems (NIPS), 2010.

8. Manas Pathak and Bhiksha Raj. "Large Margin Multiclass Gaussian Classification with Differential Privacy." PSDML workshop at ECML/PKDD, 2010.

9. Manas Pathak and Bhiksha Raj. "Privacy-Preserving Protocols for Eigenvector Computation." PSDML workshop at ECML/PKDD, 2010.

10. Manas Pathak and Eric Nyberg. "Learning Algorithms for Domain Adaptation." Asian Conference on Machine Learning (ACML), 2009.

11. Nico Schlaefer, Guido Sautter, Jeongwoo Ko, Justin Betteridge, Manas Pathak and Eric Nyberg. "Semantic Extensions of the Ephyra QA System." Text Retrieval Conference (TREC) 2007.

Professional Activities

Reviewer for
  – Conferences: MILCOM 2012, ICASSP 2011
  – Journal: IEEE Transactions on Information Forensics and Security (TIFS)

Awards & Honors

  – Springer best PhD thesis award, 2012
  – Amazon Web Services Research Grant, 2011.
  – VNIT Institute Medal & academic excellence prize for first position in the CS dept.
  – 1st position in Physics in the Maharashtra Board Higher Secondary Exam., 2002.

References

available on request.