

**Ashwin Lall**  
College of Computing  
Georgia Institute of Technology  
Atlanta, GA 30332-0280

## OBJECTIVE

To do research in academia or industry

## PERSONAL

Indian; born August 21, 1980 in Kerala, India; visa status: F-1 OPT

## EDUCATION

Degree	Year	University	Field
Ph.D.	2008	University of Rochester	Computer Science
M.S.	2005	University of Rochester	Computer Science
B.A.	2003	Colgate University	Computer Science and Mathematics

**Ph.D. Thesis:** “Streaming Algorithms for Network Flow Data Analysis”

**Thesis Advisors:** Mitsunori Ogihara and Jun Xu

## EMPLOYMENT

<b>Summer Intern</b>	IBM T.J. Watson Research Center	Summer 2007
<b>Postdoctoral Researcher</b>	College of Computing Georgia Institute of Technology	2008–present

## RESEARCH AREAS OF INTEREST

Data streaming, networking, applications of theoretical computer science

## AWARDS AND HONORS

Edward Peck Curtis Award for Excellence in Teaching by a Graduate Student, 2005

Sproull Fellowship, University of Rochester, 2003

High honors in Computer Science, Colgate University, 2003

Honors in Mathematics, Colgate University, 2003

Award for Academic Excellence (Computer Science), Colgate University, 2003

Award for Excellence in Research (Computer Science), Colgate University, 2003

Edwin J. Downie '33 Award for Mathematics, Colgate University, 2003

Phi Beta Kappa National Honor Society, Colgate University, 2003

Upsilon Pi Epsilon Computer Science Honor Society, Colgate University, 2002

## PUBLICATIONS

**Thesis:**

1. Ashwin Lall, “Streaming Algorithms for Network Flow Data Analysis”, Ph.D. Thesis, University of Rochester, Rochester, NY, July 2008.

### Refereed Conferences:

2. Ashwin Lall, Vyas Sekar, Mitsunori Ogihara, Jun Xu, and Hui Zhang, “Data Streaming Algorithms for Estimating Entropy of Network Traffic”, In *Proceedings of ACM SIGMETRICS 2006/IFIP Performance 2006*, Saint Malo, France, June 2006.
3. Haiquan Zhao, Ashwin Lall, Mitsunori Ogihara, Oliver Spatscheck, Jia Wang, and Jun Xu, “A Data Streaming Algorithm for estimating entropies of OD flows”, In *Proceedings of ACM Internet Measurement Conference (IMC)*, San Diego, CA, October 2007.
4. Ashwin Lall, Anca Sailer, and Mark Brodie, “SPIRIT: Service for Providing Infrastructure Recommendations for IT”, In *IEEE/IFIP Network Operations and Management Symposium (NOMS)* (short paper), Salvador da Bahia, Brazil, April 2008.
5. Ashwin Lall, Mark Brodie, and Anca Sailer, “A Graphical Approach to Providing Infrastructure Recommendations for IT”, In *IEEE International Conference on Services Computing (SCC)*, Honolulu, Hawaii, July 2008.
6. Ashwin Lall, Mitsunori Ogihara, and Jun Xu, “An Efficient Algorithm for Measuring Medium-to Large-sized Flows in Network Traffic”, In *Proceedings of IEEE International Conference on Computer Communications — INFOCOM Mini-Conference*, Rio de Janeiro, Brazil, April 2009.
7. Guanyao Huang, Ashwin Lall, Chen-Nee Chuah, and Jun Xu. “Uncovering Global Icebergs in Distributed Monitors”, In *Proceedings of IEEE International Workshop on Quality of Service (IWQoS)*, Charleston, North Carolina, July 2009.
8. Benjamin Van Durme and Ashwin Lall, “Probabilistic Counting with Randomized Storage”, In *International Joint Conference on Artificial Intelligence (IJCAI)*, Pasadena, California, July 2009.
9. Atish Das Sarma, Ashwin Lall, Danupon Nanongkai, and Jun Xu, “Randomized Multipass Streaming Skyline Algorithms”, In *Very Large Database conference (VLDB)*, 2009.
10. Benjamin Van Durme and Ashwin Lall, “Streaming Pointwise Mutual Information”, To appear in the *Proceedings of the Neural Information Processing Systems Conference (NIPS)*, Vancouver, Canada, 2009.
11. Haiquan Zhao, Ashwin Lall, Mitsunori Ogihara, and Jun Xu, “Global Iceberg Detection over Distributed Data Streams”, To appear in the *Proceedings of the International Conference on Data Engineering (ICDE)*, Long Beach, CA, 2010.

### Technical Reports:

12. Ashwin Lall and Mitsunori Ogihara, “The Bitwise Bloom Filter”, Technical Report TR-2007-927, Department of Computer Science, University of Rochester, Rochester, NY, November 2007.
13. Ashwin Lall, Vyas Sekar, Mitsunori Ogihara, Jun (Jim) Xu, and Hui Zhang, “Data Streaming Algorithms for Estimating Entropy of Network Traffic”, Technical Report TR886, Department of Computer Science, University of Rochester, Rochester, NY, November 2005.
14. Benjamin Van Durme and Ashwin Lall, “Probabilistic Counting as an Extension to Randomized Count Storage”, Technical Report TR942, Department of Computer Science, University of Rochester, Rochester, NY, December 2008.

### Manuscripts:

15. Ajay Mahimkar, Ashwin Lall, Jia Wang, Jun Xu, Jennifer Yates, and Qi Zhao, “Detecting and Diagnosing Correlated Network Anomalies”, Under review.

16. Santanu Guha, Ashwin Lall, Santosh Kumar, and Jun Xu, “Reliable Event Detection in Sensor Networks”, Under review.
17. Danupon Nanongkai, Atish Das Sarma, Ashwin Lall, Richard Lipton, and Jun Xu, “Regret-Minimizing Representative Databases”, Under review.

## **PATENTS FILED**

1. “Method and apparatus for determining optimized resolutions for infrastructures”, with Anca Sailer and Mark Brodie, filed from IBM T.J. Watson Research Center, IBM Docket No. YOR920070675US1.
2. “Method and apparatus for aligning an infrastructure to a template”, with Anca Sailer and Mark Brodie, filed from IBM T.J. Watson Research Center, IBM Docket No. YOR920070794US1.
3. “Estimating Origin-Destination Flow Entropy”, with Haiquan Zhao, Mitsunori Ogihara, Oliver Spatscheck, Jia Wang, and Jun Xu, filed from AT&T Research, Florham Park, NJ.

## **TEACHING EXPERIENCE**

Teaching assistant to Daniel Gildea, CS284: Advanced Algorithms, Fall 2004

Teaching assistant to Lane Hemaspaandra, CS280: Computer Models and Limitations, Spring 2004  
Calculus tutor, Colgate University, Spring 2000–Spring 2003

## **SERVICE**

*Ph.D. Admissions Committee:* 2005, 2007, 2008

As a member of this committee, I had the same responsibilities as the professors on it in hand-picking qualified students for our Ph.D. program.

*Ph.D. Recruitment Committee:* 2003, 2004, 2006

As part of my service, I helped design a webpage to attract graduate applicants to our department and maintained a webpage detailing the department’s accomplishments.

*Rochester Graduate Student Theory Seminar:* 2005-2008

I co-founded the Rochester Graduate Student Theory Seminar. This seminar met weekly to discuss topics in theory that were of interest to us. I presented at this seminar many times. The webpage for this seminar can be found here: <http://www.cs.rochester.edu/~pfali/theory-meet/>.

## **REVIEW**

Performed (journal) reviews for Transactions on Networking, Internet Mathematics, Theory of Computing Systems, AI Journal, Transactions on Parallel and Distributed Systems, Journal of Systems Science and Systems Engineering, IEEE Transactions on Industrial Informatics

## REFERENCES

1. Mitsunori Ogihara  
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Coral Gables, FL 33146, USA  
Phone: 305-284-2308  
<http://www.cs.miami.edu/~ogihara/>
2. Jun (Jim) Xu  
Professor, Georgia Tech  
801 Atlantic Drive  
Atlanta, GA 30332-0280, USA  
Phone: 404-385-2168  
<http://www.cc.gatech.edu/~jx/>
3. Lane A. Hemaspaandra  
Professor, University of Rochester  
734 Computer Studies Building  
Rochester, NY 14627-0226, USA  
Phone: 585-275-1203  
<http://www.cs.rochester.edu/~lane/>
4. Daniel Gildea  
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<http://www.cs.rochester.edu/~gildea/>
5. Jia Wang  
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