

Gautam S. Thakur

CONTACT INFORMATION	Dept. of Computer Science and Engineering University of Florida E401, CSE Building, University of Florida P.O. Box 116120, Gainesville FL 32611-6120, USA.	<i>Mobile:</i> +1-908-894-3095 <i>E-mail:</i> gsthakur@cise.ufl.edu <i>web:</i> www.cise.ufl.edu/~gsthakur <i>web:</i> www.wisonets.wordpress.com
OBJECTIVE	To obtain an academic/scientist position that allows for research in realistic and data-driven modeling of large wireless and vehicular networks, with a particular emphasis on the performance of communication and routing protocols. To study the structure, function and science of such networks (and online social networks) using a combination of empirical methods and visualization techniques.	
EDUCATION	University of Florida , Gainesville, Florida USA. Ph.D. - Aug, 2012. Dept. of Computer Science and Engineering, University of Florida, Gainesville. <ul style="list-style-type: none">• Thesis Topic: <i>Data Driven Modeling in Large Mobile Systems.</i>• Adviser: Prof. Ahmed Helmy. Co-adviser: Dr. Pan Hui.• Area of Study: Wireless and vehicular networks, measurements, mobility modeling. M.C.A - May 2004. International Institute of Professional Studies, Devi Ahilya University, India. <ul style="list-style-type: none">• <i>With Honors</i> in Computer Applications.• Area of Study: Computer Networks and database management systems. B.C.A - May 2002. International Institute of Professional Studies, Devi Ahilya University, India. <ul style="list-style-type: none">• <i>With Honors</i> in Computer Applications.	
RESEARCH FOCUS	<ul style="list-style-type: none">• Data-driven mobility modeling and protocol testing.• User Profiling and analysis of collective behavior in social and mobile wireless networks.• Internet measurements and Data Science (big data).• Vehicular networks.	
PROFESSIONAL AND RESEARCH EXPERIENCE	University of Florida , Gainesville, Florida USA <i>Research Assistant</i> January 2007 to present <ul style="list-style-type: none">• Identified the performance and the structural gaps in existing mobility models and real measurements. Thereby, proposed a new framework, metric space and mobility model for accurate evaluation.• Studied centralities and spatio-temporal patterns of thousands of mobile users to develop behavior aware protocols.• Developed a new method based on random walks and degree distribution to identify local community structures. Deutsche Telekom Laboratories , Berlin, Germany <i>Research Intern</i> May 2011 to August 2011 <ul style="list-style-type: none">• Proposed a framework for planet scale monitoring, analysis, and modeling of vehicular traffic.• Investigated the presence of self-similarity in vehicular networks to learn traffic flows.	

- Studied spatio-temporal data mining and correlations of vehicular movements to develop traffic prediction models.

Deutsche Telekom Laboratories, Berlin, Germany

Research Intern

August 2010 to December 2010

- Developed an efficient and robust distributed system to collect and manage terabyte scale sized vehicular imagery data.

HCL Technologies Limited, Noida, India

Member Technical Staff

May 2004 to June 2006

- Ported database agents to support 64-bit infrastructure.
- Responsible for sustenance engineering, release management, bug triaging, application design and migration.
- Appointed Quality Analyst to make sure the team adhered to the company quality standards.

TEACHING
EXPERIENCE

University of Florida, Gainesville, Florida USA

Teaching Assistant

January 2008 to December 2011

- CEN 3031: Software Engineering
 - Spring 2009, Spring 2010, Fall 2011.
 - Supervised discussion sections for 5 hours per week, where undergraduate students learn to incorporate essential software engineering processes in projects.
 - Drafted document templates based on IEEE recommended practice for software development life cycle, supplementary course material, including a course web site at <http://www.cise.ufl.edu/class/cen3031fa11>
 - Advocated the use of Collaboration and Learning Environment (**Sakai**) for enhanced teaching and research experience.
 - Volunteered lectures while instructor on travel.
- CNT 5106C: Computer Networks
 - Fall 2009.
 - Accomplished managing large class (130 students).
 - Augmented academic honesty with the use of anti-plagiarism tools (TurnItIn).
 - Volunteered lectures while instructor on travel.
- CIS 6930MN: Mobile Networking Laboratory
 - Spring 2008.
 - Designed unbiased scenarios and experiments for outdoor encounter-based networking and wireless measurement activities.
 - Wrote energy efficient scripts for bluetooth and wifi access point scanning on handheld devices (Nokia 810).
 - Volunteered lectures while instructor on travel.

IBM Academic Initiative, India

Instructor

February 2003 to July 2003

- Linux System Administration and Programming.
 - Designed course syllabus, homework incorporating essentials of linux system administration and programming.
 - Facilitated lab experiments to augment theoretical teaching.
 - Achieved graduate level teaching appointment.

- PATENTS Gautam S. Thakur and Pan Hui. A Framework for the Systematic Study of Vehicular Mobility and the Analysis of City Dynamics using Public Web Cameras. *European Union Patent (Under Review - Ref. EP 11187682)*. 2011.
- BOOK CHAPTERS Gautam S. Thakur. Community Detection in Biological Networks. *Applied statistics for Network Biology: Methods in Systems Biology*. 2011.
- JOURNAL PUBLICATIONS Gautam S. Thakur, Udayan Kumar, Wei-Jen Hsu and Ahmed Helmy. Gauging Human Mobility Characteristics and its Impact on Mobile Routing Performance. *International Journal of Sensor Networks*. 2011.
- Udayan Kumar, Gautam S. Thakur, and Ahmed Helmy. Proximity based Trust Advisor using Encounters for Mobile Societies: Analysis of Four Filters. *Journal on Wireless Communications and Mobile Computing*. 2011.
- Gautam S. Thakur, R. Tiwari, M.T. Thai, S.-S. Chen, and A.W.M. Dress. Detection of Local Community Structures in Complex dynamic Networks with Random Walks. *IEEE/IET Journal on System Biology*. 2009.
- CONFERENCE PUBLICATIONS Gautam S. Thakur, Pan Hui, Ahmed Helmy. Spatial and Temporal Analysis of Planet Scale Vehicular Imagery Data. In: *IEEE International conference on Data Mining workshop on Spatial and Spatio-Temporal Data Mining (ICDM - SSTDM)*. 2011.
- Gautam S. Thakur, Udayan Kumar, Ahmed Helmy, and Wei-Jen Hsu. On the Efficacy of Mobility Modeling for DTN Evaluation: Analysis of Encounter Statistics and Spatio-Temporal Preferences. In: *IEEE International Wireless Communications and Mobile Computing Conference (IWCMC)*. 2011.
- Gautam S. Thakur, Ahmed Helmy, and Wei-Jen Hsu. Similarity analysis and modeling in mobile societies: The missing link. In: *ACM MobiCom Workshop on Challenged Networks (CHANTS)*. 2010.
- Gautam S. Thakur, Mukul Sharma, and Ahmed Helmy. SHIELD: Social sensing and Help In Emergency using mobiLe Devices. In: *IEEE Global Telecommunications Conference (GLOBECOM)*. 2010.
- Udayan Kumar, Gautam S. Thakur, and Ahmed Helmy. PROTECT: proximity-based trust-advisor using encounters for mobile societies. In: *IEEE International Wireless Communications and Mobile Computing Conference (IWCMC)*. 2010.
- Gautam S. Thakur. CINORA: Cell Based Identification of Node Replication Attack in Wireless Sensor Networks. In: *IEEE International Conference on Communications Systems (ICCS)*. 2008.
- PAPERS UNDER SUBMISSION OR REVIEW Gautam S. Thakur and Ahmed Helmy. A Framework for the performance analysis of routing protocols in Mobile Societies.
- Gautam S. Thakur, Pan Hui, and Ahmed Helmy. Towards Realistic Vehicular Network Modeling Using Planet-scale Public Webcams.
- Gautam S. Thakur, Pan Hui, and Ahmed Helmy. A Framework for Realistic Vehicular Network Modeling using Planet-scale Public Webcams.
- Gautam S. Thakur, Pan Hui, and Ahmed Helmy. Self-Similarity and Long Range Dependence in Vehicular Networks.
- Gautam S. Thakur, Damien Fay, Pan Hui, and Ahmed Helmy. Granger Network Analysis in Vehicular Networks.

Gautam S. Thakur, Pan Hui, and Ahmed Helmy. Measures of Centrality in Global Studies based on online traffic web cameras.

HONORS AND AWARDS

- Travel Grants
 - NSF travel grant to attend International conference on Data Mining. 2011.
 - CISE departmental grant to attend Mobicom. 2010.
 - ICNP Travel Grant. 2008.
- CISE department achievement award.
- Awarded “BRAVO” for Excellence in Innovative Work at HCL Technologies Limited.
- Devi Ahilya University employee full sponsorship for undergraduate and graduate school (six years).
- State Bank of Indore scholarship for four consecutive years.

SERVICE

Conference Committees and Services

- Technical Program Committee (TPC) member for ACM Hot Topics in Planet-scale Measurement (HotPlanet), 2012.
- Reviewer for IEEE Transactions on Vehicular Technology (TVT).
- External reviewer for Elsevier Ad Hoc Networks Journal, IEEE Transaction on Mobile Computing, ACM MobiCom Workshop on Challenged Networks (CHANTS), IEEE Sensor, Mesh and Ad Hoc Communications and Networks (SECON)

Graduate Mentoring

- Supervised two master degree students during individual study course.

Member

- Institute for Electrical and Electronics Engineers (IEEE), 2006 - present

APPLICATION AREAS

Routing protocol testing, large scale internet measurements, spatio-temporal profiling and behavioral analysis of human mobility, congestion mitigation and forecasting of vehicular traffic, data mining and complex system analysis, vehicular networks, data science.

HARDWARE AND SOFTWARE SKILLS

Mobility and Routing Protocol Analysis

- Delay tolerant protocols including epidemic routing, spray and wait and others.
- Hands on experience using The ONE Simulator.
- Worked with graph visualization tools for big data analysis.
- Worked with Map Reduce framework for Data Science problems.

Computer Programming:

- C, C++, Java, PHP, UNIX shell scripting (including POSIX.2), GNU make, SQL, MATLAB, and others.

Tools and Applications:

- Hadoop, Hive, HSQL, Gephi, Cytoscape, Pajek, Graphviz, SVN, CVS and Clearcase.

Operating Systems and Databases:

- Microsoft Windows family, Apple OS X, Linux, BSD, AIX, Solaris, and other UNIX variants, MySQL, Oracle 11g.

Productivity Applications:

- \TeX (\LaTeX , \BibTeX), Vim, Eclipse

REFERENCES
AVAILABLE TO
CONTACT

Dr. Ahmed Helmy (e-mail: helmy@ufl.edu; phone: +1-352-392-1200)

- Associate Professor, Computer Science and Engineering, University of Florida
- ◇ E426 CSE Building, University of Florida, P.O. Box 116120 Gainesville, FL 32611-6120, USA

Dr. Pan Hui (e-mail: ben@net.t-labs.tu-berlin.de; phone: +49 30 8353 58626)

- Senior Research Scientist, Deutsche Telekom Laboratories
- ◇ Ernst-Reuter-Platz 7, 10587 Berlin, Germany

Mr. Tarun Sukhu (e-mail: tsukhu@hcl.in; phone: +91-981-034-2014)

- Associate General Manager, HCL Technologies
- ◇ Noida, India