

Education

- **University of Florida** Gainesville, FL
PhD in Computer Engineering May 2011
 - GPA: 3.78/4.0 and Advisor: Dr.Ahmed Helmy
 - Inferences, Trust and Privacy in Mobile Networks
 - Programming DTN protocols over mobile devices (OpenMoko and Nokia N810)
 - Graduate Coursework: Advance Data Structure, Analysis of Algorithms, Computer Architecture, Parallel Computing, Distributed Operating Systems, Mobile Computing, Computer Networks, and Design and Analysis of Mobile Wireless Networks
- **University of Florida** Gainesville, FL
Master of Science in Computer Engineering Aug. 2008
 - GPA: 3.75/4.0 and Advisor: Dr.Ahmed Helmy
 - Thesis: Inference of User Behavior And Investigation of Privacy Issues In WLAN Trace Analysis
- **DAIICT (Dhirubhai Ambani Institute of Information and Communication Technology)** Gandhinagar, India
Bachelor of Technology in Information and Communication Technology May. 2005
 - GPA: 3.56/4.0 (with *Distinction*)
 - Thesis: Development of Hardware Testbed for Sensor Networks

Work Experience

- **University of Florida** Gainesville, FL
Research Assistant May. 2007 - present
 - Inferences, Trust and Privacy in Mobile Networks
- **Google Inc.** Google Summer of Code Program
Student Developer May. 2007 - Aug. 2007
 - Successfully completed porting Etherboot NIC device drivers to gPXE framework, a network boot loader for an open source development group, Etherboot.org
- **DAIICT** Gandhinagar, India
Research Engineer Jun. 2005 - May. 2006
 - Brainstormed and implemented a wireless sensor network collar for tracking wildlife animals
 - Worked on an IBM sponsored project to develop tools for configuring Linux kernel for Embedded PowerPC
- **Reliance Communications** Mumbai, India
Intern May. 2003 - Jul. 2003
 - Software (R-Connect) was developed to enable Linux Users to connect to internet using Reliance India Mobile

Skills

Languages/Tools: C/C++, Java, Visual Basic, BASH Shell, MATLAB, PL/SQL, L^AT_EX, QT, HTML

Operating Systems: Linux, Windows, Mac OS X

Hardware: Atmel AVR and TINI microcontrollers, Digital I²C and SPI sensors, Zigbee Communication module (Maxstream), Nokia N810, OpenMoko

Miscellaneous: Excellent troubleshooting and debugging skills

Projects

Design and Analysis of Mobile Wireless Networks: Analyzed WLAN trace data to ascertain mobility characteristics of users. Also built wireless coverage maps and studied encounter relationships

Peer to Peer File Sharing: Implemented server, client and a tracker server

Modular Sensor Network Testbed: A novel Modular hardware was designed to facilitate testing of sensor network applications before designing a custom hardware

Micro Climate Monitoring: An independent system based on TINI microcontroller and sensors along with Reliance Mobile to log weather details to a remote database

Node Authentication protocol: Designed and Implemented a protocol for node authentication in a sensor network

Bandwidth Distribution and Accounting software: A low cost routing and bandwidth accounting system was developed using a PC running Linux with multiple NICs

File Transfer through Sound Card: Transfer of file or data was achieved between two computers using the sound cards

MIPS simulator: Implemented a simulator for Pipelined MIPS architecture which uses scoreboarding

Traveling Salesman problem: Implemented a solution to this problem for a parallel cluster using MPI library

Enigma: Simulated a World War II German Encryption machine in java

Publications and Demos

Udayan Kumar, Ahmed Helmy, “Human behavior and Challenges of anonymizing WLAN traces”, IEEE Globecom, Nov. 2009

Udayan Kumar, Gautam Thakur, Wei-Jen Hsu, Ahmed Helmy, Poster: “Practical *Profile*-based DTN Routing in Mobile Social Networks”, ICNP, Princeton, NJ, Oct 2009

Udayan Kumar, Ahmed Helmy, Poster: “How **Private** are WLAN traces?”, ICNP, Orlando, FL, Oct 2008

Udayan Kumar, Nikhil Yadav, Ahmed Helmy, “Gender-based Grouping of Mobile Student Societies”, The International Workshop on Mobile Device and Urban Sensing (MODUS), IPSN workshop, St. Louis, MO, Apr 2008

Udayan Kumar, Sungwook Moon, Wei-jen Hsu, Ahmed Helmy, Demo: “Visualization and Representation of Mobile Network Users”, INFOCOM, Phoenix, AZ, Apr 2008

Udayan Kumar, Nikhil Yadav, Ahmed Helmy, Poster: “Gender Based Feature Extraction in a Campus-wide WLAN”, ACM MOBICOM, Montreal, Sept 2007 (*3rd Prize winner*, Student Research Competition, also published in ACM Mobile Computing and Communication Review MC²R journal - peer reviewed, Jan 2008)

Udayan Kumar, Nikhil Yadav, Ahmed Helmy, Poster: “Analyzing Gender-gaps in Mobile Student Societies”, CRAWDAD (in cooperation with ACM SIGMOBILE), Montreal, Sept 2007

Udayan Kumar, Vishal Jalan, Prabhat Ranjan, Ashish Ranjan, Priyank Mundra, “CENSE: A modular Sensor Network Testbed”, National Conference on Embedded System, Mumbai, Apr 2006

Awards and Achievements

Travel Grant for ICNP 2009

3rd Prize winner, Student Research Competition, organized by ACM MOBICOM 2007

National Talent Search Exam (NTSE) scholarship awarded by the Govt. of India, 1999

Volunteered for many IEEE events (2003-2006)

Solved bugs for open source desktop project, *GNOME*

Coordinated Summer Camp 2004 for school children at Gandhinagar