Arpit Gupta

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Research Interest

My research interest broadly is in Systems and Networks. Specifically I am interested in cloud computing, mobile systems and wireless networks.

Education

MS,
Computer Science
North Carolina State University, Raleigh, USA GPA : 3.8/4.0

Bachelor of Technology, May 2009
Electronics and Communication Engineering
Indian Institute of Technology (IIT), Roorkee, India

Honors and Awards

- WiFox work was Slashdotted and covered by CBS, Engadget, TechCrunch, Telegraph etc.
- **SWE Intern at Google Inc.** for Summer 2011.
- Awarded NSF Travel Grant for CoNEXT 2010, Philadelphia, USA.
- Awarded competitive **College of Engineering Fellowship** at North Carolina State University for 2010-11 academic year.
- Ranked Top 99.57 percentile (787) among 170,000 IIT-JEE-2005 aspirants
- Ranked Top 99.88 percentile (591) among 450,000 AIEEE-2005 aspirants.
- State Rank 30 in AIEEE-2005 among 50,000 candidates.

Work Experience

Graduate Research Assistant: **North Carolina State University, USA** September 2010 (Present)

- Adviser: Dr. Injong Rhee, Dr. Suman Kumar
- Working on delivering mobile Platforms as a Service (mPaAS).
- Worked on solving WiFi peformance degradation for large conference environments and public Wifi HotSpots.
- Worked on developing a WiFi scan interval optimization problem to minimize energy wasted due to unnecessary WiFi scans.

Summer Intern: **Google Inc. Mountain View, CA, USA** May-August 2011

- Adviser: Dr. Nandita Dukkipati, also worked with Matt Matthis, Neal Cardwel etc.
- Explored the problem of timeouts in TCP especially for short flows. Studied the implementation of TCP timeouts to identify possible problems for short flows. Instrumented Kernel changes and tested them over real traffic on Google's front end servers and further analysed logs to understand limitations of current implementation.

Project Assistant: **Indian Institute of Science, Bangalore, India** March-August 2010

- Adviser: Dr. Anurag Kumar, Dr. Joy Kuri, Dr. Malati Hegde
- Aim: Providing proportional fairness to mobile stations with different link quality in 802.11 WLAN Networks.
- Developed scheduling algorithm ensuring proportional fairness to stations with disparate link qualities.

Publications

- ***Arpit Gupta****, Jeongki Min, Injong Rhee*, "WiFox: Scaling WiFi Performance for Large Audience", **ACM CoNext 2012** (Acceptance Rate 17%).
- ***Arpit Gupta***, "Systreams: Case for delivering mobile platforms as a Service", Under Preparation.
- *Jeongki Min,* ***Arpit Gupta****, Injong Rhee*, "WiFox: WiFi Performance For Large Audience", **Poster/Demo NSDI 2012**.
- ***Arpit Gupta****, Abhishek Kr. Gupta, Cosmin Bocaniala, Venkat Sastry*, "Avoidance of threat zone by UAV for automated navigation", in proc. of ***IEEE- INDICON*-2008**, Kanpur, India, 2008
- ***Arpit Gupta***, "Avoidance of Threat Zone by UAV using AG Algorithm, in National Conference on Algorithms, Mumbai, 2008.

Tech Talks/ Presentations

- SyNRG, Duke University
- SySChat, UNC Chapel Hill
- ACM CoNext, Nice France (upcoming)

Technical Reports

- ***Arpit Gupta****, Kyunghan Lee, Injong Rhee*, Is Predicting Energy Drain of Smartphones battery for its lifetime possible ?", Tech Report, December 2011.
- ***Arpit Gupta****, Devendra Modium, Krishna Potluri, Injong Rhee*, HUMLOG: Localization leveraging regularity in human mobility", Tech. Report
- ***Arpit Gupta****, Anurag Kumar, Joy Kuri, S.V.R. Anand, Malati Hegde*, An Adaptive Fair Scheduler in ADWISER for Performance Management of IEEE 802.11 Wireless LANs", Tech. Report
- ***Arpit Gupta****, Sachin Joshi, Ashish Arora*, Developing a pragmatic model for collision avoidance of UAVs, report *B.Tech Project*, 2009.

Patents

- Methods and Apparatus for ADWISER: An Integrated Approach for Internet Access Bandwidth and Performance Management of an Enterprise Network, *Provisional Indian patent* application filed in August 2010.

Relevant Courses

Data Structures and Algorithms	Operating Systems Principles
Automated Learning & Data Mining	Advanced Internet Protocol
Computer Networks	Introduction to Internet Protocol
Computer Performance Modeling	

Skills

- Programming: C/C++, Java, Python, HTML, Javascript, CUDA, Kernel Programming (Also taught for graduate course as Teaching Assistant)
- Network Stack: TCP/IP, HTTP, UDP, L2
- Software Packages: MATLAB, R, Eclipse, OPNET, Android SDK, Network Drivers (ATH9K, MADWIFI),