

EDUCATION

The University of Utah, Salt Lake City, UT, USA

M.Phil in Computer Science, Jun 2009

GPA: 3.951 out of 4

Birla Institute of Technology and Science, Pilani, India

B.E.(Hons.), Computer Science, Jul 1999

GPA: 9.14 out of 10

MLN Senior Secondary School, Yamunanagar, India

Senior Secondary Examination (12th), May 1995

Percentage: 86% (Gold Medalist: 1st rank in the Haryana Board)

EXPERIENCE

Yahoo Software Development India Ltd, Bangalore

July 2009 - now

Technical Lead

<http://bangalore.yahoo.com>

School of Computing, University of Utah, Salt Lake City, USA

Jan 2003 – May 2009

Research Assistant, Distributed Systems Group ([Prof. John Carter](#))

- **A collective approach to harness idle resources:** Designed and developed an infrastructure to efficiently utilize idle resources of end nodes distributed across the Internet. Built two distributed services on top of this infrastructure – a content distribution service and a remote backup service. This system uses a novel performance based incentive model that pays participating nodes in proportion to their contribution and is cheat-resilient. As compared to P2P systems like Kaaza, BitTorrent, it provides more effective utilization of idle resources, has a more meaningful incentive model, and is better suited for building legal and commercial distributed services.
- **Surrogate Computing for Resource Constrained Mobile Devices:** Designed and developed a surrogate infrastructure that allowed resource-constrained devices to utilize a surrogate computer's compute, network, and storage resources. This system was used to offload energy-intensive operations from energy-constrained mobile devices and to execute bandwidth-intensive queries near a data source. Surrogate resources were shared using virtual machine technology to ensure resource isolation and security.

School of Computing, University of Utah, Salt Lake City

Jan-Dec 2006, Jun-Aug 2007

Research Assistant, [Flux Research Group](#) ([Prof. Jay Lepreau](#))

- Worked as part of the team building and managing **Emulab network testbed system** (<http://www.emulab.net>). Implemented remote caching of events to take care of network disruptions for wide area node management. Made improvements/bug fixes in data collection system that collects periodic latency and bandwidth data between all Planetlab nodes and improved mechanism for finding fully connected cliques for experiments. Analyzed the impact of shared bottleneck on accurately emulating a wide area network using Emulab.

VMware, Palo Alto, California

May-Aug 2005

Member of Technical Staff Intern

- Designed an initial prototype for application aware distributed resource scheduling for datacenters managed by VMware VirtualCenter. This system exploited the application specific knowledge and dynamic performance monitoring to maximize the datacenter resource utilization while meeting application needs.

School of Computing, University of Utah, Salt Lake City

Teaching Assistant

Aug 2001 – Dec 2002,
Aug – Dec 2003, Aug – Dec 2005

- *Fall 2001, Fall 2003: **Operating Systems**; Fall 2002: **Computer Networks**; Spring 2002: **Compilers**; Fall 2005: **Distributed Systems***
- My duties included assisting in developing assignments and projects, leading project specific discussion sessions, lab sessions to assist individual students on assignments and projects, grading of projects, mid-term and final exam,, and occasional teaching of regular class.
- Got School of Computing Outstanding Teaching Assistant Award for 2003-2004

Tektronix, Bangalore, India
Software Design Engineer

Aug 1999 - July 2001

- Designed and developed embedded Java applications for Tektronix TDS600/700 and TDS7000 series oscilloscopes for measurement and analysis of hardware design. Projects included power measurement analysis, Jitter Timing Analysis, and Rambus Memory Analysis.

Lucent R&D Center, Pune, India
Intern

Jan - July 1999

- Designed system verification plan and executed system testing for voice based dialing system built for telecommunication providers

National Institute of Science, Technology and Development Studies, New Delhi May- Jul 1997
Intern

- Designed and developed a data analysis system for analyzing the science coverage in Indian Newspapers.

PUBLICATIONS

(available online at <http://www.cs.utah.edu/~sgoyal/pubs/>)

- Sachin Goyal, "[**A Collective Approach to Harness Idle Resources**](#)", PhD Dissertation Draft, School of Computing, University of Utah, May 2009
- Sachin Goyal and John Carter, "[**Ensuring Prolonged Participation and Deterring Cheating Behaviors in a Collective**](#)", Technical Report UUCS-08-010, School of Computing, University of Utah, Sep 2008
- Sachin Goyal and John Carter, "[**A Collective Approach to Harness Idle Resources**](#)", Technical Report UUCS-08-009, School of Computing, University of Utah, Sep 2008
- Sachin Goyal, "**WMCSA 2004: 10 Years of Mobile and Ubiquitous Computing**" in IEEE Pervasive Computing, Vol 4, No 2, pp 88-90, 2005.
- Sachin Goyal and John Carter, "[**A Lightweight Secure Cyber Foraging Infrastructure for Resource-Constrained Devices**](#)", Sixth IEEE Workshop on Mobile Computing Systems and Applications (WMCSA), English Lake District (UK), Dec 2-3, 2004.
- Sachin Goyal and John Carter, "[**Safely Harnessing Wide Area Surrogate Computing -or- How to Avoid Building the Perfect Platform for Network Attacks**](#)", First Workshop on Real, Large Distributed Systems (WORLDS), San Francisco (USA), Dec 5, 2004
- Sachin Goyal and John Carter, "**Enabling Surrogate Computing (Poster)**", presented at Research Day, School of Computing, University of Utah, April 2005 (Best poster award winner)

ACCOMPLISHMENTS

- **Recipient of Best Poster Award**, Annual Research Day, School of Computing, University of Utah, Apr 2005
- **Recipient of Outstanding Teaching Assistant Award for 2004**, School of Computing, University of Utah, 2004
- **Technical Excellence in Teamwork Award** by CEO, Tektronix, Beaverton (USA). April 2001 – "This award recognizes the team who, in pursuit of a technical solution, demonstrates the ability to overcome customer, organizational, geographical, or cultural challenges to achieve uncommon results."
- **Quarterly Software Achievement Award** by MD, Tektronix India for contribution towards K2 package, Jan 2001
- **Achievement Award** by VP, Tektronix USA for excellent contributions to the design and development of Strategic Software Applications, Nov. 2000.
- **Special Award** by MD, Tektronix India for contributions to IBU Group, June 2000.
- **Merit-cum-Need Scholarship** by BITS, Pilani for 1995 to 1999.
- **Recipient of Gold medal** for achieving first rank in the Senior Secondary School Certificate

- Examination (12th) conducted by Haryana State Board, 1995.
- **Certificate of Merit** for having been placed in top 1% in the state for National Standard Examination in Physics, 1995.

RELEVANT COURSEWORK

University of Utah

Advanced Networking, Advanced Operating Systems, Advanced Computer Architecture, Advanced Compilers, Foundations of Computer Science, Machine learning, Advanced Computer Graphics I, Programming Languages and Semantics, Advanced Scientific Computation I, Systems Research Seminar

Birla Institute of Technology and Science

Systems Programming, Computer Networks, Programming Languages and Compiler Construction, Advanced Computer Organization, Data Structures, Database Systems

MISC

- **Programming Languages:** C, C++, Java, Perl, Python, Php
- **Platforms:** Linux/Unix, Windows
- **Graduate Record Examination (GRE):** 800 out of 800 in analytical section, October 2000

PROFESSIONAL SERVICE

- **External Reviewer for**
 - [Computer Networks Journal](#)
 - [COMSWARE 2007](#)
 - [ICDCS 2006](#)
- **Organizer of [Pervasive Computing Reading Group](#)**, School of Computing, University of Utah, Jun 2003 – Nov 2004
- **Member of Graduate Student Advisory Committee**, School of Computing, University of Utah, **Elected**. 2002-2003

REFERENCES

- **Prof John Carter**
Research Manager - Energy Aware Systems, IBM Research, Austin, Texas, USA
(Adjunct Associate Professor, School of Computing, University of Utah)
Email: retrac@cs.utah.edu
- **Prof Sneha Kasera**
Assistant Professor, School of Computing, University of Utah, Salt Lake City, USA
Email: kasera@cs.utah.edu
- **T. K. Ramkumar**
India Engineering Manager, Tektronix Engineering Development (India) Limited, Bangalore
Email: t.k.ramkumar@tektronix.com