

Shirshanka Das

CONTACT

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OBJECTIVE

To develop novel software and networked systems in a commercial setting.

EDUCATION

University of California, Los Angeles, CA, USA

Ph.D. Summer 2005 (Expected)

- Dissertation : Wired-Wireless Overlays: a Case for Application-driven Networks
- GPA: 3.98
- Advisor: Dr. Mario Gerla

M.S., Computer Science, GPA: 3.97, June 2003

Indian Institute of Technology, New Delhi, India

B.Tech., Computer Science & Engineering, GPA: 3.7, May 2001

- Class rank: **4th out of 63** (B.Tech. + Dual degree)

HONORS

- Best Paper Award for “**Cooperative Downloading for Vehicular Ad Hoc Wireless Networks**” in WONS 2005. (<http://www.wonss.org>)
- UCLA Graduate Tuition Fellowship, Fall 2004
- All India Rank 65 amongst 100,000 students in IIT Joint Entrance Examination in 1997
- National Talent Search Scholarship Award
- C.B.S.E. board exam: top .01% in both Maths & Chemistry
- Best Science Student Award in high-school

PROFESSIONAL EXPERIENCE

Jun 2004 – Sep. 2004, Intern **Intel Corp.** Santa Clara, CA

Distributed Computing Solutions group : Advisor – Dr. Ravi Subramaniam

- Designed an enterprise grid architecture for deployment and management of the grid fabric and implemented a prototype. Worked with several open source solutions and developed novel techniques to merge them.

Jul 2003 – Sep. 2003, Intern **Information Sciences Institute** Marina Del Rey, CA

Center for Grid Technologies : Advisor – Dr. Carl Kesselman

- Identified key areas for improvement for mobility support in Globus Toolkit 3.0 (GT3). Designed a mobility support framework to support mobility for DHCP enabled hosts on a wireless-enhanced grid.

May 2000 - Jul 2000, Intern **Cisco Systems, Inc.** San Jose, CA

MAN Optical Networks Business Unit : Advisor – Dr. Sharat Prasad

- Worked on developing and simulating a novel mesh restoration scheme for DWDM based optical networks. Single handedly developed all models and conducted performance evaluation from scratch in less than 2 months.

June 1999 - July 1999, Intern **Fujitsu Laboratories of America, Inc.** San Jose, CA

Advanced CAD Research Department : Advisor - Dr. Rajeev Murgai

- Modified a key placement algorithm in their in-house tool to further optimize the delay on the critical path (Performance Optimization Group)

**RESEARCH
PROJECTS**

Sept 2001 – Current **Univ. of California, Los Angeles** CA, USA

Graduate Student Researcher in the Network Research Lab: Advisor: Prof. Mario Gerla

Grido: a Grid based overlay architecture

Providing a backbone overlay service with standard query-able interfaces. Tackled real issues with deployment of overlay networks for unicast routing. Innovative use of Vivaldi coordinates for doing routing. Use WS-Agreement interfaces to perform negotiations with clients wishing to access the overlay. Currently implementing the design on Planet-lab

CarTorrent: Cooperative downloads for the Vehicular wireless network [Best Paper Award]

Infostation Model on the freeway with intermittent connectivity to the rest of the Internet. Designed a Bit Torrent-like cooperative protocol that uses popularity for quicker data transfer.

HandyMan: Smart Connectivity Manager for Linux

Handoff seamlessly between multiple network technologies : Ethernet, Bluetooth and 802.11b. Provide user with control over an application's network priority. Successfully demonstrated the utility of the project with video and scp competing with each other over wireless

Escort: Nomadic Secure Access to the wireless infrastructure

Guests can walk in, get authenticated, use the Internet access, and walk out. Created a working prototype of a black-box functioning as a tamper-proof Escort for guests in an enterprise. Out of band signaling on the grid, allows complete confidentiality, and optionally anonymity. Watchdog mechanism to prevent malicious guests.

Qmulator: QoS routing on a Linux-based testbed

Implemented a testbed on machines running on Linux. Implemented QOSPF routers on each. MPLS layer was added to support traffic engineering functionality. Implemented multipath QoS routing algorithm for traffic engineering. Developed applications to run on them. Performed extensive evaluation of performance.

TEACHING EXPERIENCE

Fall 2004 Univ. of California, Los Angeles CA, USA

Teaching Associate for Fundamentals of Computer Networking (CS118)

- Duties including teaching 5 lectures in the absence of the professor, office hours, weekly home-works, creating, proctoring and grading examinations for a class of 65 students.
- Single handedly responsible for writing specs for a Bit Torrent-like project in C/C++ as well as writing the midterm and the final
- Wrote the tracker, torrent server and sample pseudo-Bit Torrent peers in Perl, automated the grading process for the project
- Tested networking as well as process control skills of the students
- Instrumental in starting up a code-base for helpful scripts as well as a repository for old TA solution clients and servers within the department to help future TAs get their work done better.

SELECTED PUBLICATIONS

1. **Cooperative Downloading for Vehicular Ad Hoc Wireless Networks:** Wireless On-Demand Network and Services 2005. [**Best Paper Award**]
2. **ESCORT: A Decentralized and Localized Access Control System for Mobile Wireless Access to Secured Domains:** Second ACM Workshop on Wireless Security (WiSe'03), in conjunction with MobiCom 2003
3. **Practical QoS Network System with Fault Tolerance:** The 50th International Symposium on Performance Evaluation of Computer and Telecommunication Systems [SPECTS 2002]
4. **A Cross-Layer Framework for Wireless LAN QoS support:** IEEE International Conference on Information Technology Research and Education, ITRE 2003.
5. **SPAWN: A Swarming Protocol for Vehicular Ad Hoc Networks:** 1st ACM Workshop on Vehicular Adhoc Networks (VANET'04), in conjunction with MobiCom 2004.

TECHNICAL SKILLS

- Languages: C, C++, Perl, Python, Java and other languages like ML, Prolog and Scheme.
- Operating Systems: Un*x, Windows.
- Network simulators: ns2, Qualnet and Opnet. Familiar with ssfnet.
- Protocols: TCP, IP, IEEE standards like 802.11[a,b,g,n,s].

RELEVANT COURSEWORK

- Advanced Computer Networks: **A+**, Special Topics in Computer Science-Wireless Networking and Mobile Computing : **A**, Queuing Theory: **A+**, Computer Networks and Communication: Performance modeling and evaluation : **A**, Optical Networks: **A+**, Advanced Topics in Internet Research: **A**, Optimization Algorithms: **A**, Pervasive Computing: **A**, Advanced Operating Systems: **A**, Advanced Network Security: **A-**

EXTRA-CURRICULAR

- *Editor of UCLA Scientific Review*, a peer reviewed Journal started by UCLA Science and Engineering Graduate students in 2004. (<http://www.scientificreview.ucla.edu>)

PERSONAL

- Born October 17th 1979, in Ranchi, India. Citizen of India holding an F-1 visa.

References available upon request

A detailed version of this resume can be found at www.cs.ucla.edu/~shanky/detailed_cv.pdf