# Rajesh Roy

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## Education

- Ph.D., Computer Science, University of California, Davis
  - September 2006 – Present
- M.S., Computer Science, University of California, Davis, December 2007
  - GPA 3.85/4
- B.E. (Bachelor of Engineering), Computer Science and Engg., Jadavpur University, India, June 2006
  - GPA 8.81/10

## Experience/Research

- **Research Assistant**, Networks Lab., Dept. of Computer Science, UC Davis, **April 2007 – Present**
  - **Traffic and Network Engineering in Survivable Optical WDM Mesh Networks**

    A. **Traffic Engineering**
    - Proposed degraded-service-aware multipath bandwidth provisioning algorithm in optical WDM mesh network.
    - The proposed solution minimizes link loads and supports degraded service (vs. no service at all in case of a network element failure), namely it guarantees a fraction of the requested bandwidth even in case of a link failure.

    B. **Network Engineering**
    - Investigated network engineering by proposing a new parameter called exhaustion probability of a *network cut*.
    - Proposed an efficient procedure to calculate a lower bound on the exhaustion probability of a *network cut*.
    - Our solution can be applied to a network upgrade problem, and it is independent of any routing algorithm.

- **Previous Research Experience**
  - **A. Improvement of TCP Congestion Control Algorithm in Hybrid Network (Wired and Wireless)**
  - **B. Physical Impairment Aware Routing Algorithm Design for Ad Hoc Networks**

- **Teaching Assistant**, Computer Science, UC Davis, **September 2006 – March 2007**
  - Course: Software Development and Object-Oriented Programming

- **Student Researcher**, Centre for Mobile Computing and Communication, Calcutta, India, **2005 –2006**
  - Improvement of the Performance of Ad Hoc Routing Protocols.
  - Implementation of a Multi-Hop Ad Hoc Network at Jadavpur University Campus.

- **Project Trainee**, IBM Global Services, India, **June-July 2005.**
  - Worked on "Integrating SIP with SAP Enterprise Portals".

## Skills

- Operating Systems: Linux/Unix, Windows
- Programming: JAVA, C, C++, Shell script, Python.
- Tools: CPLEX, NS-2, OPNet.

## Honors and Awards

- UC Davis Block Grant Fellowship, April – June 2007
- UC Davis Non-Resident Tuition Fellowship, September 2006 – Present
- Scored 'A' in "Science Talent Search Examination-1999-2000" conducted by Jatiya Vijnyan Parisad associated with Indian Science Congress association.

## Reference

**Biswanath Mukherjee**
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## Publications

1. **Rajesh Roy** and Biswanath Mukherjee, "**Degraded-Service-Aware Multipath Provisioning in Telecom Mesh Networks**," *Proc., IEEE/OSA Optical Fiber Communications Conference (OFC/NFOEC)*, San Diego, CA, Feb. 2008.

2. **Rajesh Roy**, Sudipto Das, Anup K. Ghosh, and Amitava Mukherjee, "**Modified TCP Congestion Control Algorithm for Throughput Enhancement in Wired-cum-Wireless Networks**," *Proc., 4th Swedish National Computer Networking Workshop*, Luleå, Sweden (SNCNW 2006), Oct 2006.

3. Anup K. Ghosh, Sudipto Das, **Rajesh Roy**, and Amitava Mukherjee, "**Modified Congestion Control Algorithm for TCP Throughput Enhancement in Wired-cum-Wireless Network**," *Proc., IEEE International Symposium on Personal Indoor and Mobile Radio Communications (PIMRC 2007)*.

4. Anup K. Ghosh, Sudipto Das, **Rajesh Roy**, and Amitava Mukherjee, "**Constant Congestion Window approach for TCP – effect on Fairness**," *Proc., 3rd Swedish National Computer Networking Workshop (SNCNW 2005).*

5. **Rajesh Roy**, Sudipto Das, and Pradip K. Das, "**A Pragmatic Approach towards the Improvement of Performance of ad-hoc Routing Protocols**," *Proc., 4th Asian International Mobile Computing Conference (AMOC 2006).*

6. Sudipto Das, **Rajesh Roy**, and Pradip K. Das, "**Optimizations to Multipath Routing Protocols in Mobile Ad hoc Networks**," *Proc., Intl. Conference on Emerging Applications of IT (EAIT 2006).*

All publications are available at: http://wwwcsif.cs.ucdavis.edu/~royr/publications.html