

## Fahad Rafique Dogar

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- CONTACT INFORMATION 8213 Wean Hall  
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Pittsburgh, PA 15213 USA *web page: www.cs.cmu.edu/~fdogar*
- OBJECTIVE To obtain a summer research internship position in the area of networking and distributed systems
- EDUCATION **Carnegie Mellon University, Pittsburgh, PA**  
Ph.D. Student, Department of Electrical and Computer Engineering (Aug 2006 - present)
  - Advisor: Professor Peter Steenkiste**Lahore University of Management Sciences, Pakistan**  
BSc (Hons), Major: Computer Science (Sep 2001 - May 2005)  
*Gold Medal for the Best Student in Computer Science (SCGPA 4.0/4.0)*
  - Research Advisor: Professor Zartash Uzmi
- RESEARCH INTERESTS AND EXPERIENCE My research interests span problems related to networking and distributed systems. More specifically, I like to design network architectures and protocols for wired and wireless networks that result in more robust and efficient communication on an end-to-end basis.
- Currently I am exploring the active use of middleboxes in order to improve throughput in wireless networks. Towards this end, we are designing a new network architecture and transport layer protocol that has active involvement of APs/proxies. We expect to improve the offered throughput in the presence of varying network conditions for single hop 802.11 networks and multi-hop wireless mesh networks.
- My previous research focused on restoration routing and resource allocation in MPLS/DiffServ networks. More specifically, we solved problems such as: i) approximating optimal local restoration routing in the presence of limited network state information, ii) efficient bandwidth sharing between backup paths of different QoS classes and iii) connection preemption schemes and their optimality for a multi-class QoS network. Most of this work was sponsored by CISCO under their University Research Program (URP).
- PUBLICATIONS
  - Fahad Rafique Dogar, Laeeq Aslam, Zartash Uzmi, Sarmad Abbasi, and Young-Chon Kim, **"Connection Preemption in Multi-Class Networks"**, in IEEE Globecom 2006, San Francisco, USA.
  - Fahad Rafique Dogar, Zartash Uzmi, and Shahab Baqai, **"PFR: A Distributed Preemption Strategy for Improved QoS in Multi-Class Networks"**, Workshop on Distributed Autonomous Network Management Systems (DANMS), co located with IEEE ICAC 2006, Dublin, Ireland, 2006.
  - Fahad Rafique Dogar, Zartash Uzmi, and Shahab Baqai, **"CAIP: A Restoration Routing Architecture for DiffServ Aware MPLS Traffic Engineering"**, 5th Workshop on Design of Reliable Communication Networks (DRCN), pp 55-60, 2005.
  - Fahad Rafique Dogar, **"Restoration Routing using MPLS Traffic Engineering"**, Infocom 2005 Student Workshop.
  - Faisal Aslam, Saqib Raza, Fahad Rafique Dogar, and Zartash Uzmi, **"NPP: A Facility based Computation Framework for Restoration Routing Using Aggregate Usage Information"**, QoS-IP 2005, LNCS 3375, pp 150-163, 2005.

- Fahad Rafique Dogar, ”**Implementing Restoration Routing in a LINUX Router**”, LUMS CS Technical Report 0510, 2005

TEACHING  
EXPERIENCE

TA for CS-471 (undergraduate networking course at LUMS), 2003-2004  
TA for CS-472 (advance networking course at LUMS), 2004-2005

RELEVANT  
COURSEWORK

Packet Switched Networks (CMU), Introduction to Computer Security (CMU), Graduate Networks (CMU), Network Security (CMU), Distributed Systems (LUMS), Topics in Internet Research (LUMS), Multimedia Communication (LUMS)

PROJECTS

**Implementing Restoration Routing in a LINUX Router:** Implemented traffic engineering extensions to OSPF and a constraint based routing module in LINUX.

**Filtered Web@LUMS:** Designed and implemented a web proxy firewall for the LUMS community

**Impact of Scheduling on QoS:** Conducted a simulation study of several scheduling schemes using OPNET

**QoS Support for MPEG-4 Traffic:** A survey report of different QoS mechanisms proposed for MPEG-4 traffic

HONORS AND  
AWARDS

Higher Education Commission (HEC) fellowship for graduate studies at Carnegie Mellon University.

Best Academic Performance award for straight 'A' grades in the Advanced Level Examinations (A-Level) conducted by the University of Cambridge, England.

First Position in IEEE All Pakistan Computer Science Quiz Competition

Second Position in IEEE Coding Competition

Student travel grant awards to attend ACM Sigmetrics 2006 and IEEE Infocom 2005.

REFERENCES

Available on request