

# Minas Gjoka

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RESEARCH INTERESTS	Online social networks, peer-to-peer systems.	
EDUCATION	<b>University of California, Irvine</b> <i>Ph.D. in Computer Science (Networked Systems)</i> • Dissertation: “Measurement of Online Social Networks” • Advisor: Athina Markopoulou <i>June 2008 – Dec. 2010</i>	
	<b>University of California, Irvine</b> <i>M.S. in Computer Science (Networked Systems)</i> <i>Sept. 2005 – June 2008</i>	
	<b>Athens University of Economics and Business</b> <i>B.S. in Computer Science</i> • Graduated first in my class (out of ~150) <i>Sept. 2000 – Jan. 2005</i>	
RESEARCH EXPERIENCE	<b>University of California, Irvine</b> <i>Online Social Networks</i> Collection of large datasets from online social networks (Facebook, Last.fm) through distributed crawling. Information spreading and sampling methodologies in large graphs. <i>Feb. 2008 – Dec. 2010</i>	
	<i>Video on Demand Streaming over Peer-to-Peer</i> Collaborated with Telefonica researchers to build a peer-to-peer VoD system with support for forward and backward seeks. Participated in the design and implementation of key mechanisms at the peers and the tracker, and experimental testing. <i>June 2007 – Nov. 2008</i>	
	<i>IP Traceback</i> Participated in the system design of a practical IP Traceback scheme with network coding. <i>Jan. 2008 – Mar. 2008</i>	
	<i>Denial-of-Service using peer-to-peer networks</i> Exposed BitTorrent exploits to launch DDoS attacks. Executed controlled experiments on the Internet and analyzed the generated traffic. <i>Jan. 2007 – May 2007</i>	
	<i>Link loss inference with network coding</i> Tomography mechanisms to infer link loss rates in general topologies with network coding. Designed coding scheme, conducted performance measurement simulations of the inference method, and studied the effect of source selection. <i>Oct. 2006 – May 2007</i>	
	<i>IP Fast Re-Routing</i> Compared the performance of IPFRR mechanisms in the case of unplanned link/router failures. <i>Apr. 2006 – June 2006</i>	
	<b>Athens University of Economics and Business</b> <i>IEEE Computer Society International Design Competition</i> Designed and developed the “Bus Positioning and Utilization System”, as part of the undergraduate CS department four-member team. Reached semi-final stage. <i>Dec. 2004 – Apr. 2005</i>	
	<i>Undergraduate Dissertation</i> Designed and evaluated synthetic graph models to simulate the Internet at the Autonomous System level. Released topology generator and graph analysis tools. Supervised by Professor Martha Sideri. <i>Oct. 2004 – Jan. 2005</i>	

## PUBLICATIONS

- A. Markopoulou, C. Fragouli, M. Gjoka, “A Network Coding Approach to Loss Tomography”, under review in *IEEE Transactions on Information Theory*.
- M. Gjoka, M. Kurant, C. T. Butts, A. Markopoulou, “Practical Recommendations on Sampling OSN Users by Crawling the Social Graph”, *JSAC Special Issue on Measurement of Internet Topologies*, 2011.
- M. Gjoka, C. T. Butts, M. Kurant, A. Markopoulou, “Multigraph Sampling of Online Social Networks”, *JSAC Special Issue on Measurement of Internet Topologies*, 2011.
- M. Kurant, M. Gjoka, C. T. Butts, A. Markopoulou, “Walking on a Graph with a Magnifying Glass”, In *Proc. of ACM SIGMETRICS '11*, June 2011.
- P. Sattari, M. Gjoka, A. Markopoulou, “A Network Coding Approach to IP Traceback”, In *Proc. of IEEE International Symposium on Network Coding (NetCod) '10*, Toronto, Canada, June 2010.
- M. Gjoka, M. Kurant, C. T. Butts, A. Markopoulou, “Walking in Facebook: A Case Study of Unbiased Sampling of OSNs”, In *Proc. of IEEE INFOCOM '10*, San Diego, CA, Mar. 2010.
- X. Yang, M. Gjoka, P. Chhabra, A. Markopoulou, P. Rodriguez, “Kangaroo: Video Seeking in P2P Systems” In *Proc. of IPTPS '09*, Boston, MA, Apr. 2009.
- M. Gjoka, M. Sirivianos, A. Markopoulou, X. Yang, “Poking Facebook: Characterization of OSN Applications” In *Proc. of SIGCOMM Workshop on Online Social Networks (WOSN) '08*, Seattle, WA, Aug. 2008.
- M. Gjoka, C. Fragouli, P. Sattari, A. Markopoulou, “Loss Tomography in General Topologies with Network Coding”, In *Proc. of IEEE GLOBECOM '07*, Washington DC, Nov. 2007.
- A. Spatharis, I. Foudalis, M. Gjoka, P. Krouska, C. Amanatidis, C. H. Papadimitriou, M. Sideri, “Improved Tradeoff-based Models of the Internet”, *Communications of SIWN (System and Information Sciences Notes)*, Vol. 1, No. 4, pp. 409-414, July 2007.
- K. El Defrawy, M. Gjoka, A. Markopoulou, “BotTorrent: Misusing BitTorrent to Launch DDoS Attacks”, In *Proc. of USENIX Workshop on Steps to Reducing Unwanted Traffic on the Internet (SRUTI) '07*, Santa Clara, CA, June 2007.
- M. Gjoka, V. Ram, X. Yang, “Evaluation of IP Fast Reroute Proposals”, In *Proc. of IEEE COMSWARE '07*, Bangalore, India, Jan. 2007.

WORK  
EXPERIENCE**University of California, Irvine**

*Research Assistant* *Sept. 2007 – Dec. 2010*

Conducted research in online social networks, peer-to-peer networks, and network coding.

*Teaching Assistant* *Jan. 2006 – Dec. 2006*

Appointed TA for three quarters in undergraduate courses.

*Reader* *Sept. 2005 – Dec. 2005, Jan. 2007 – June 2007*

Appointed grader for three quarters in undergraduate courses.

**Adball LLC**

*Founder* *Jan. 2008 – Apr. 2010*

Founder of Adball (<http://www.adball.com>), an online collaboration platform that crowd-sources the concept, content generation, and dissemination of advertising campaigns. Adball won two business plan awards and served ~ 20K unique users during its five month online presence.

**CAIDA/UCSD**

*Research Intern* *July 2008 – Sept. 2008*

Characterization of the sources of invalid traffic received at DNS root servers. Supervised by Dr. KC Claffy.

**Telefonica Research**

*Research Intern* *July 2007 – Sept. 2007*

System design and implementation of a high performance Video-on-Demand peer-to-peer system that supports forward and backward seeking. Supervised by Dr. Pablo Rodriguez.

### **AT&T Labs Research**

*Research Intern*

*June 2006 – Aug. 2006*

Experimental performance analysis of peer-to-peer (BitTorrent, eMule, Gnutella) and client-server (HTTP, FTP) downloading protocols on Planetlab, a testbed of 500 machines scattered worldwide. Supervised by Dr. Balachander Krishnamurthy.

### **Atos Origin**

*IT Help Desk Supervisor*

*July 2004 – Aug. 2004*

Supervision and coordination of IT technicians and volunteer staff during the 2004 Summer Olympics.

### **Athens University of Economics and Business**

*Lab Assistant*

*Sept. 2003 – June 2004*

Part-time system & network administrator in the Computer Science lab.

### TEACHING EXPERIENCE

#### **University of California, Irvine**

Spring quarter '07: Reader for ICS 51 - "Introduction to Computer Organization" (~90 students)

Winter quarter '07: Reader for CS 133 - "Network Laboratory" (~50 students)

Fall quarter '06: Teaching Assistant for CS 132 - "Computer Networks" (~30 students)

Spring quarter '06: Teaching Assistant for ICS 143 - "Principles of Operating Systems" (~100 students)

Winter quarter '06: Teaching Assistant for ICS 153 - "Computer Networks" (~65 students)

Fall quarter '05: Reader for ICS 22 - "Introduction to Computer Science II" (~45 students)

#### **Athens University of Economics and Business**

Spring semester '04: Teaching Assistant for "Programming Languages-Compilers"

### PATENTS

X. Yang, M. Gjoka, P. Rodriguez, P. Chhabra, "Tracker in P2P systems to optimize for DVD functionalities", European patent, filed in 2009

### PRESENTATIONS

"Measurement of Facebook Users and Applications", *Docomo Labs*, Palo Alto, June 2010.

"Walking in Facebook: A Case Study of Unbiased Sampling of OSNs", *IEEE INFOCOM '10*, Mar. 2010.

"Uniform Sampling in OSNs", *CPCC Seminar, University of California, Irvine*, Mar. 2010

"Kangaroo: Video Seeking in P2P Systems", *USENIX IPTPS '09*, Boston, Apr. 2009

"Poking Facebook: Characterization of OSN Applications", *ACM SIGCOMM Workshop on Online Social Networks (WOSN) '08*, Seattle, Aug. 2008 and *Telefonica Research*, Barcelona, Oct. 2008.

"Identifying DNS heavy hitters in root servers data", *CAIDA-WIDE Workshop*, Marina Del Rey, Aug. 2008.

"Loss Tomography in General Topologies with Network Coding", *IEEE GLOBECOM '07*, Nov. 2007.

### HONORS AND AWARDS

SIGCOMM student travel grant to attend CoNEXT '10

University of California, Irvine/CPCC Fellowship 2007-2008

USENIX student grant to attend NSDI '08

HSSoE School of Engineering travel grant to attend GLOBECOM '07

USENIX student grant to attend USENIX ATC '07

University of California, Irvine/Networked Systems Fellowship 2005-2007

### PROFESSIONAL ACTIVITIES

**Reviewer:** ACM SIGCOMM Computer Communication Review, Elsevier Computer Networks, IEEE Network, IEEE Transactions on Multimedia

**Membership:** IEEE Communications Society, USENIX Association, OCTANE

COMPUTING  
SKILLS

Programming Languages: C/C++, Python, Java, PHP, Perl, Matlab, R

Web Development: HTML, XML, CSS, Javascript, AJAX, jQuery

Operating Systems: GNU/Linux (Debian, Fedora), MS Windows

Miscellaneous: databases (MySQL, MS SQL Server), sockets programming (TCP/UDP), multithreading,

Bash/Awk scripting, version control (SVN/CVS), Xen virtualization, Modelnet, L<sup>A</sup>T<sub>E</sub>X