

Xenia Mountroudou, Ph.D.

Visiting Assistant Professor,
Jacksonville University,
Department of Computing Sciences,
2800 University Blvd.,
Jacksonville, FL 32211

EMAIL: xmountr@ju.edu

WEBSITE: <http://xeniamountroudou.net/>

PHONE: (904)-256-7308

RESEARCH INTERESTS

- Queueing Theory, Stochastic Processes, Queueing Networks, Markov Chains, Markovian Arrival Processes, Matrix Analytic Methods.
- Workload characterization, traffic modeling for computer systems and high speed networks.
- Power aware systems, modeling for energy conservation.

TEACHING INTERESTS

- Software Programming (Java, Python, C++), Web Programming
- Computer Networks, Internet Protocols, Connection Oriented Networks
- Computer Simulation, Performance Modeling
- Computer Architecture, Operating Systems

EDUCATION

Ph.D. in Computer Science

Aug. 2007

North Carolina State University, Raleigh, NC

Thesis Title: Bimodal scheduling for Optical Burst Switched (OBS) networks and characterization of burst aggregation algorithms

Comprehensive Areas: Characterization of the departure process in OBS networks. Performance evaluation of high speed networks using traces. Queueing network analysis, end-to-end delay approximation.

Adviser: Dr. Harry G. Perros

Dissertation Committee Co-chairs: Dr. Xiuli Chao, Dr. David Thunte, Dr. Michael Devetsikiotis

M.S. in Computer Engineering,

Sept. 2002

Integrated Software and Hardware Systems program, University of Patras, Greece

Thesis Title: Design of a Packet Scheduler for High-Speed ATM Networks

Adviser: Dr. Dimitrios N. Serpanos

Graduate Degree in Computer Science

Sept. 2000

University of Crete, Greece.

A W A R D S

Systems Pass-It-On Award

Anita Borg Institute, 2011. Project title: "Robots, Dwarves and Alice in wonderland: a different view of computer science for college and high school girls". The goal of the project is to attract college and high school female students to studies in computer science and engineering fields.

Mentored Teaching Award

North Carolina State University, 2005

Outstanding Teaching Assistant Award

North Carolina State University, 2005: awarded to top three percent of North Carolina State University teaching assistants every year.

Three year scholarship for Ph.D. studies International GRE score: top 20%

R E S E A R C H E X P E R I E N C E

Postdoctoral Research Associate

Jan. 2010 – July 2011

College of William and Mary, Department of Computer Science

- Conducted research on power aware storage systems, maintaining reliability and performance guarantees with probabilistic modeling.
- Developed workload characterization methods focusing on spatial and temporal locality of IOs on disk drives.
- Constructed workload shaping methods to increase idleness and power savings on disk drives.

Research Assistant, North Carolina State University

Sept. 2004 – Sept. 2007

- Performed research on performance evaluation of a bi-modal scheduler for a star Optical Burst Switched network.
- Developed analytical models of burst aggregation algorithms for Optical Burst Switched Networks.
- Devised stochastic model of queuing network for high speed optical burst switched network.

Research Assistant, University of Patras, Greece

Sept. 2001 – Sept. 2002

- Conducted research on Computer Networks Architecture. Designed a packet scheduler for Asynchronous Transfer Mode networks using Atmel's FPSlic Field Programmable Gate Array.

Undergraduate Research Assistant

Sept. 1998 – July 2000

Computer Architecture and VLSI Systems Lab, Foundation of Research and Technology Hellas (ICS-FORTH)

- Participated in research on computer architecture. Designed interface for Personal Computer bus in Verilog Hardware Design Language.
- Collaborated in research project on computer networks. Tested a high speed cell manager for Asynchronous Transfer Mode networks.

TEACHING EXPERIENCE

Visiting Assistant Professor, Jacksonville University **Aug. 2011 – Present**

Currently teaching "CS150: Personal Productivity using technology", "CS340: Data Structures", and "CS380: Web Programming".

Teaching Assistant, North Carolina State University **Sept. 2003 – May 2007**

- Prepared and taught lectures in: Internet Protocols, Computer Performance Evaluation and Connection Oriented Networks. Taught distance education sessions.
- Supervised undergraduate students on “EnLightned Computing”, project that involved student projects on high speed networks, sponsored by MCNC.

Instructor K-12 IBM outreach program **2008 – 2009**

- Organized a Web Design class for 7th, 8th grade female students.
- Taught “Lego Mindstorms” class to 8th grade female students.
- Participated in professional orientation programs for female high school students.

PROFESSIONAL EXPERIENCE

Software Performance Engineer, IBM **Oct. 2007 – Dec. 2009**

Research Triangle Park, Durham, NC

- Delivered performance optimizations of software products using profiling tools, prototyping and applying queueing theory.
- Innovated with prototypes and tuning to decrease the startup time and memory footprint of Web Application Server software (WebSphere)
- Evaluated performance for telecommunication applications, such as VoIP using the Session Initiation Protocol (SIP).
- Filed two US patents related to software performance engineering.

Technical Staff Member, Ellemedia Technologies **Sept. 2002 – June 2003**

- Developed Field Programmable Gate array code for Asynchronous Transfer Mode modems.

PUBLICATIONS

Refereed Journal Publications

- BUSHRA ANJUM, HARRY PERROS, XENIA MOUNTRUIDOU, KIMON KONTOVASSILIS, *Bandwidth Allocation under End-to-End Percentile Delay Bounds*, Wiley International Journal of Network Management (to appear)
- XENIA MOUNTRUIDOU AND HARRY PERROS, *A discrete-time queueing network model of a hub-based OBS architecture*, Telecommunication Systems Journal, Volume 41, Number 3 (July, 2009), Pages 173-184, ISSN 1018-4864

- XENIA MOUNTRUIDOU AND HARRY PERROS, *On the departure process of the burst aggregation process in optical burst switching*, The International Journal of Computer and Telecommunications Networking Volume 53, Issue 3(February 2009), Pages 247-264, ISSN:1389-1286
- XENIA MOUNTRUIDOU, *On the traffic modeling of burst aggregation algorithms using video and data traces*, Telecommunication Systems Volume 39, Number 3-4 (2008), Pages 223-234
- DIMITRIOS N. SERPANOS, POLUXENI MOUNTRUIDOU, MARIA GAMVRILI, *Evaluation of hardware and software schedulers for embedded switches*, ACM Transactions on Embedded Computing Systems (TECS), Vol. 3, Issue 4 (2004) pp. 736-759

Conference Proceedings

Acceptance rates are provided when known.

- XENIA MOUNTRUIDOU, ALMA RISKAN AND EVGENIA SMIRNI, *Adaptive Workload Shaping for Power Savings on Disk Drives*, Proceedings of International Conference in Performance Engineering (ICPE/WOSP 2011) (acceptance rate 30%)
- FENG YAN, XENIA MOUNTRUIDOU, ALMA RISKAN AND EVGENIA SMIRNI, *Toward automating work consolidation in clusters with performance guarantees*, Proceedings of International Symposium on Modelling, Analysis and Simulation of Computer and Telecommunication Systems (MASCOTS 2011) (acceptance rate 25%)
- XENIA MOUNTRUIDOU AND HARRY G., PERROS, *On the traffic modeling of burst aggregation algorithms using video and data traces*, GridNets 2007, Lyon, France, 17-19 October 2007
- XENIA MOUNTRUIDOU, *An Analytical Model of a Burst Aggregation Algorithm for Optical Burst Switched Networks*, Proceedings of IEEE High Capacity Optical Networks Conference (HONET'06), NC, Sept. 6 - Sept. 8, 2006
- XENIA MOUNTRUIDOU, VISHWAS PUTTASUBBAPPA, HARRY PERROS, *A Zero Burst Loss Architecture for star OBS Networks*, Net-Con 2006 (part of the IFIP World Computer Congress 2006), Santiago, Chile, August 20 - 25 2006
- XENIA MOUNTRUIDOU, HARRY PERROS, *Characterization of the Burst Aggregation Process in Optical Burst Switching*, IFIP Networking 2006 Proceedings, Coimbra, Portugal, May 15 - 19 2006 (acceptance rate 20%)
- XENIA MOUNTRUIDOU, HARRY PERROS, MAGED BESHAI, *Performance Evaluation of an Optical Burst Switching Scheme for Grid Networks*, GridNets 2005, Boston October 6 - October 7 2005
- SERPANOS, D.N., MOUNTRUIDOU, X., GAMBRILI, M., *Evaluation of switch schedulers for embedded systems*, Computers and Communication ISCC 2003 Proceedings., Kemer - Antalya, Turkey June 30 - July 3 2003

Journal Publications under Review

- XENIA MOUNTRUIDOU, ALMA RISKAN AND EVGENIA SMIRNI, *PREFigure: a Performance, Power, and Reliability Framework for Disk Drives*, submitted to IEEE Transactions on Computers (under review)

Patents

- JARED JURKIEWIC, XENIA MOUNTRUIDOU, DAVID BRAUNEIS, SLAVA MCDUGALD, PRIYA BENJAMIN, *A method and invention for reducing the live heap bytes and class bytes of a translated Java application*, US patent, IBM, ref. M270002US, to be submitted 2011

- DENISE BELL, XENIA MOUNTRUIDOU, CLARK GUSSIN, *System and method for graphical context drill down*, US patent, IBM, ref. RSW920100026US1, submitted 2010

Workshop Proceedings

- XENIA MOUNTRUIDOU, ALMA RISKAKI, EVGENIA SMIRNI, *Saving Power without Compromizing Disk Drive Reliability*, ERSS: Workshop on Energy Consumption and Reliability of Storage Systems, July 25, 2011, Orlando, Florida, USA
- T. OIKONOMOU, P. MOUNTRUIDOU, D. SERPANOS, *Design of a High-Speed Cell Manager for ATM Systems*, IFIP WG6.3 Workshop, August 29 - September 1, 1999, Rethymnon, Crete, Greece

Posters/Demos

- XENIA MOUNTRUIDOU AND HARRY PERROS, *A Performance Evaluation Study of an Optical Network with Temporal and Spatial Scheduling*, CACC Fall 2004 Research Review, Raleigh, North Carolina, November 10, 2004

Theses

- P. MOUNTRUIDOU, *Bimodal scheduling for OBS networks and characterization of burst aggregation algorithms*, Ph.D. Thesis, Department of Computer Science, North Carolina State University (2007)
- P. MOUNTRUIDOU, *Design of a Packet Scheduler for High-Speed ATM Networks*, Master's Thesis, Integrated Hardware and Software Systems, Univ. of Patras (2002) (Available in Greek only)
- P. MOUNTRUIDOU, *Design and Implementation of a Network Processor Data Path with Multiple Register Sets*, Diploma Thesis, Computer Science Department, Univ. of Crete (2000) (Available in Greek only)

S E R V I C E

Student Activities Chair 7th International Conference on Quantitative Evaluation of Systems (QEST) 2010

SIGMETRICS Shadow Program Committee (2010) Program committee next to the official one that reviews papers submitted to the SIGMETRICS conference.

Treasurer (2006-2007) Women in Computer Science, North Carolina State University

Journal Reviewer: IEEE Communications Magazine, IEEE Transactions on Communications, Performance Evaluation Review, IEEE Communication Letters, Computer Networks, Journal on Selected Areas in Communication (JSAC), The Computer Journal, Telecommunication Letters

Conference Reviewer: Globecom, IFIP Networking, IEEE International Conference on Communications, GridNets

Member The Institute of Electrical and Electronics Engineers (IEEE), Association for Computing Machinery (ACM)

REFERENCES

Dr. Harry Perros
Alumni Distinguished Graduate Professor
Department of Computer Science
North Carolina State University
Raleigh, NC 27695-7534, USA
Email: hp@csc.ncsu.edu
Phone: +1-919-515-2041

Dr. Evgenia Smirni
Professor of Computer Science
Department of Computer Science
College of William and Mary
P.O. Box 8795, Williamsburg, VA 23187-8795, USA
Email: esmirni@cs.wm.edu
Phone: +1-757-221-3580

Dr. David Thunte
Professor of Computer Science
Department of Computer Science
North Carolina State University
Raleigh, NC 27695-7534
E-mail: thunte@csc.ncsu.edu
Phone: +1-919-515-7003

Dr. Xiuli Chao
Professor of Industrial and Operations Engineering
Michigan Engineering
University of Michigan
1205 Beal Ave. Ann Arbor, MI 48109-2117 USA
E-mail: xchao@umich.edu
Phone: +1-734-615-8888