

DR. MAZEN M. KHARBUTLI

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PERSONAL INFORMATION

- **Nationality:** Jordanian
- **Date of Birth:** March 8, 1977
- **Marital Status:** Married; two children.

EDUCATION

- **Ph.D. in Computer Engineering** Aug. 2002 – Dec. 2005
 - University:** North Carolina State University, Raleigh, NC, USA
 - Advisor:** Dr. Yan Solihin
 - Co-advisor:** Dr. Milos Prvulovic, Georgia Institute of Technology, USA
 - Dissertation:** Improving the Security of the Heap through Inter-Process Protection and Intra-Process Temporal Protection
 - GPA:** 4.0/4.0
 - Honors:** Selected to the Honor Society of *Phi Kappa Phi*
- **M.S. in Electrical Engineering (Specialty Area: Computer Engineering)** Aug. 2000 – May 2002
 - University:** University of Maryland, College Park, MD, USA
 - Advisor:** Dr. Donald Yeung
 - Scholarly Paper:** Memory Hierarchy in Chip Multiprocessors
- **B.S. in Electrical Engineering (Specialty Area: Computer Engineering)** Sept. 1995 – June 2000
 - University:** Jordan University of Science and Technology (JUST), Irbid, Jordan
 - GPA /Rank:** Excellent (84.1%) Class Rank: 3rd out of 107 students
 - Honors:** University President's Honor List
Engineering Dean's Honor List

EXPERIENCE

- **Current Positions:**
 - Sept. 2009 – present: Chairman of the Department of Computer Engineering, JUST, Jordan.
 - Nov. 2008 – present: Member of the Board of Trustees of the Arab College, Amman, Jordan.
 - Sept. 2008 – present: Adjunct Professor of Computer Engineering, New York Institute of Tech., Amman, Jordan.
 - Feb. 2006 – present: Assistant Professor of Computer Engineering, JUST, Jordan.
- **Previous Positions:**
 - Sept. 2007 – Aug. 2008: Vice Dean of the Faculty of Computer and Information Tech., JUST, Jordan.
 - Jan. 2003 – Dec. 2005: Research Assistant, Center for Efficient, Scalable, and Reliable Computing (CESR), North Carolina State University, USA.
 - Jan. 2003 – Dec. 2003: Teaching Assistant, North Carolina State University, USA.
 - Jan. 2001 – May 2002: Teaching Assistant and Grader, University of Maryland, USA.

PUBLICATIONS (in refereed journals and conferences)

Journal Publications:

- Mazen Kharbutli and Yan Solihin, “**Counter-Based Cache Replacement and Bypassing Algorithms**”, in *IEEE Transactions on Computers (IEEE-TOC)*, vol. 57, no. 4, pp. 433-447, April 2008.
- Rithin Shetty, Mazen Kharbutli, Yan Solihin, and Milos Prvulovic, “**HeapMon: A Helper-Thread Approach to Programmable, Automatic, and Low-Overhead Memory Bug Detection**”, in *IBM Journal of Research and Development: Special Issue on Exploratory Systems (IBM-JRD)*, vol. 50, no. 2/3, pp. 261-275, April 2006.
- Mazen Kharbutli, Yan Solihin, and Jaejin Lee, “**Eliminating Conflict Misses Using Prime Number-Based Cache Indexing**”, in *IEEE Transactions on Computers (IEEE-TOC)*, vol. 54, no. 5, pp. 573-586, May 2005.

Conference Publications:

- Rami Sheikh and Mazen Kharbutli, “**Improving Cache Performance by Combining Cost-Sensitivity and Locality Principles in Cache Replacement Algorithms**”, in *the Proc. of the 28th IEEE Int. Conference on Computer Design (IEEE-ICCD)*, Amsterdam, the Netherlands, Oct. 2010. Acceptance Rate: 29%.
- Ahmad Almheidat and Mazen Kharbutli, “**HeapBud: A Software Tool for Heap-Based Bug Detection**”, in *the Proc. of the 2nd Int. Congress on Pervasive Computing and Management (ICPCM)*, Sydney, Australia, Dec. 2009. Acceptance Rate: N/A.
- Mazen Kharbutli, Xiaowei Jiang, Yan Solihin, Guru Venkataramani, and Milos Prvulovic, “**Comprehensively and Efficiently Protecting the Heap**”, in *the Proc. of the 12th ACM Int. Conf. on Architectural Support for Programming Languages and Operating Systems (ACM-ASPLOS)*, San Jose, CA, USA, Oct. 2006. Acceptance Rate: 24%.
Also appears in: *ACM SIGOPS Operating Systems Review*, vol. 40, no. 5, pp. 207-218, Dec. 2006.
ACM SIGARCH Computer Architecture News, vol. 34, no. 5, pp. 207-218, Dec. 2006.
ACM SIGPLAN Notices, vol. 41, no. 11, pp. 207-218, Nov. 2006.
- Mazen Kharbutli and Yan Solihin, “**Counter-Based Cache Replacement Algorithms**”, in *the Proc. of the 23rd IEEE Int. Conference on Computer Design (IEEE-ICCD)*, San Jose, CA, USA, Oct. 2005. Acceptance Rate: 32%.
- Rithin Shetty, Mazen Kharbutli, Yan Solihin, and Milos Prvulovic, “**HeapMon: a Low Overhead, Automatic, and Programmable Memory Bug Detector**”, in *the Proc. of the IBM Watson Conference on Interaction between Architecture, Circuits, and Compilers (IBM-P=ac2)*, Yorktown Heights, NY, USA, Oct. 2004. Acceptance Rate: N/A.
- Mazen Kharbutli, Keith Irwin, Yan Solihin, and Jaejin Lee, “**Using Prime Numbers for Cache Indexing to Eliminate Conflict Misses**”, in *the Proc. of the 10th IEEE Int. Conference on High Performance Computer Architecture (IEEE-HPCA)*, Madrid, Spain, Feb. 2004. Acceptance Rate: 18%.

Ph.D. Dissertation:

- Mazen Kharbutli, “**Improving the Security of the Heap through Inter-Process Protection and Intra-Process Temporal Protection**”, *PhD Dissertation, North Carolina State University*, Dec. 2005.

PRESENTATIONS

- “**Improving Cache Performance by Combining Cost-Sensitivity and Locality Principles in Cache Replacement Algorithms**”, in *the 28th IEEE Int. Conference on Computer Design (ICCD)*, Amsterdam, the Netherlands, Oct. 2010.
- “**Comprehensively and Efficiently Protecting the Heap**”, in *the 12th ACM Int. Conference on Architectural Support for Programming Languages and Operating Systems (ASPLOS)*, San Jose, CA, USA, Oct. 2006.
- “**Counter-Based Cache Replacement Algorithms**”, in *the 23rd IEEE Int. Conference on Computer Design (ICCD)*, San Jose, CA, USA, Oct. 2005.

- “Improving Cache Performance Using Event Counting in Cache Replacement and Bypassing”, in the *NCSU ECE Graduate Student Association Seminar Event*, Aug. 2004. Second place winner.
- “Using Prime Numbers for Cache Indexing to Eliminate Conflict Misses”, in the *NCSU ECE Graduate Student Association Seminar Event*, Aug. 2003. Second place winner.

TEACHING

Courses Taught at Jordan University of Science and Technology (JUST)		
Course Number	Course Title (Credit Hours)	Semesters
CPE 745	Parallel Computing (3)	Spring 2010, Fall 2008, Spring 2007
CPE 740	High Performance Computer Architecture (3)	Fall 2010, Spring 2008, Fall 2006
CPE 595	Special Topics in Computer Engineering: (3) Parallel, Distributed Systems, and Cloud Computing	Spring 2011
CPE 551	Advanced Computer Architecture (3)	Spring 2009
CPE 472	Operating Systems (3)	Fall 2010, Fall 2009
CPE 452	Microprocessor Interfacing Lab (1)	Spring 2010
CPE 352	Computer Architecture (3)	Summer 2008, Spring 2008, Fall 2007, Fall 2006
CPE 341	Applied Probability and Queuing Theory (3)	Fall 2007
CPE 311	Object-Oriented Software Development (4)	Spring 2006
CPE 254	Digital Logic Design and Comp. Architecture (3)	Summer 2007
CPE 253 CPE 255	Digital Logic Design Lab (1)	Summer 2010, Spring 2009, Spring 2008, Summer 2007, Fall 2006
CPE 252	Computer Organization and Design (3)	Spring 2007
CPE 251	Digital Logic Design (3)	Summer 2009, Spring 2009, Fall 2008, Summer 2006, Spring 2006
CS 112	Introduction to Object-Oriented Programming (3)	Spring 2011

Courses Taught at New York Institute of Technology (Amman Campus)		
Course Number	Course Title (Credit Hours)	Semesters
CSCI 860 EENG 860	Special Topics: Computer Security and Ethical Hacking (3)	Fall 2009
CSCI 741 EENG 741	Computer Architecture II (3)	Spring 2009, Fall 2008
INCS 741	Cryptography (3)	Spring 2011
CSCI 651	Algorithm Concepts (3)	Fall 2010, Spring 2010

ADVISING (Research)

Main Advisor (M.S. Theses at JUST)		
Rana AlQurem	A Software Approach to Stack Memory Protection Based on Duplication and Randomization	July 2010
Tareq Alawneh	A Dynamic L2 Cache Partitioning Algorithm in Chip Multiprocessors	August 2009
Hussein Bin Samma	A Software Approach to Heap Memory Protection Based on Duplication and Randomization	January 2009
Rami Al-Sheikh	Improving the Performance of L2 Caches through Combining Both Locality and Cost-Sensitivity Principles in Cache Replacement Policies	August 2008
Abdullah Zizan	Improving the Performance of L2 Caches by Combining Counter-Based Cache Replacement and Correlation Prefetching Algorithms	May 2008
Co-advisor (M.S. Theses at JUST)		
Ghashmi Bin Talib	Self-timed Scheduling of Static Data Flow Graphs for Very Long Instruction Word Architectures	December 2010
Bashar Haddad	Reconfigurable Architecture for the Implementation of DSP Applications	March 2010

Wafaa Kanakri	Elliptic Curve Crypto-Processor Implementation Using Efficient Calculations of Modular Multiplicative Inverse	January 2010
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PROFESSIONAL SERVICES

- Member of the Board of Trustees of the Arab College, Jordan.
- Vice Dean of the Faculty of Computer and Information Technology at JUST.
- Chairman of the Department of Computer Engineering at JUST.
- Member of the international advisory board for the International Congress on Pervasive Computing and Management (ICPCM), 2008-2010.
- Member of the program committees for the following conferences:
 - The 2nd International Conference on Information and Communication Systems (ICICS), Jordan, 2011.
 - The 16th IEEE International Conference on Parallel and Distributed Systems (ICPADS), China, 2010.
 - The 17th International Conference on Telecommunications (ICT), Qatar, 2010.
- Reviewer for several international journals and conferences.
e.g. IEEE Transactions on Knowledge and Data Engineering (IEEE-TKDE); IEEE Int. Symposium on Workload Characterization (IISWC); ACM Conf. on Compilers, Architecture, and Synthesis for Embedded Systems (CASES); ACM Transactions on Architecture and Code Optimization (TACO); IEEE Int. Conf. on Dependable Systems and Networks (IEEE-DSN).
- Faculty advisor for the Open Source Group (OSG) at JUST.
- Member of the following committees at JUST:

	Committee	Academic Year
Faculty of Computer and Information Technology Committees	Graduate Studies and Research Committee	2007/2008, 2009/2010, 2010/2011
	Curriculum and Course Equivalency Committee	2010/2011
	High Performance Computing Committee	2008/2009, 2009/2010
	Students' Practical Training Committee	2007/2008
	Course Schedules and Teaching Loads Committee	2007/2008
	Labs and Lab Manuals Improvement Committee	2006/2007
Dept. of Computer Engineering Committees	Graduate Studies and Research Committee	2009/2010, 2010/2011
	Course and Exam Schedules Committee	2009/2010, 2010/2011
	Graduation Projects Committee	2009/2010
	Curriculum Committee	2006/2007, 2007/2008, 2008/2009
	Students Affairs and Course Equivalency Committee	2008/2009
	Labs and Tenders Committee	2006/2007

SCHOLARSHIPS AND AWARDS

- Nov. 2008: Second place winner (with 3 of my students) in the Annual Queen Rania National Entrepreneurship Competition.
- Oct. 2003: Selected to the **Phi Kappa Phi** Honor Society.
- Aug. 2000: Full scholarship from JUST to pursue the M.S. and Ph.D. degrees in Computer Engineering in the USA.
- June 2000: University President's Honor List at JUST.
- June 2000: Engineering Dean's Honor List at JUST.

REFERENCES

Available Upon Request