

## Dr. Mohammed Houssaini Sqalli

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### EDUCATION:

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**Ph.D. in Engineering - Systems Design, May 2002.**

University of New Hampshire, Durham, NH, USA.

**Dissertation:** Diagnosing InterOperability Problems and Debugging Models by Enhancing Constraint Satisfaction with Case-Based Reasoning.

**Master of Science in Computer Science, December 1996.**

University of New Hampshire, Durham, NH, USA.

**“Ingenieur d’Etat” in Computer Science, July 1992.**

Ecole Mohammadia d’Ingenieurs, Rabat, Morocco.

### EXPERIENCE:

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**Assistant Professor (August 2002 – Present).**

Computer Engineering Department at King Fahd University of Petroleum & Minerals, Dhahran, Saudi Arabia.

**Senior Automation Testing Specialist (Sept. 1999 – July 2002).**

Siemens - Mobile - Telecom Innovation Centre, Ottawa, Canada.

**Research and Project Assistant at the ATM Consortium (May 1996 – August 1999)**

InterOperability Lab, University of New Hampshire, Durham, NH, USA.

**Software Engineer (1992-1994)**

Computer Science Department, Ministry of Finance, Rabat, Morocco.

### RESEARCH INTERESTS:

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Network Management, Network Design, Network Security, Traffic Engineering, and Iterative Heuristics.

### MEMBERSHIP OF PROFESSIONAL SOCIETIES:

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- Institute of Electrical and Electronic Engineering (IEEE), IEEE Communications Society, IEEE Computer Society
- Saudi Scientific Society for Electrical Engineers (SSSEE)
- Saudi Engineering Council

## **ACADEMIC HONORS AND AWARDS:**

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**Fulbright Scholarship** (1994-1998) sponsored by the Moroccan-American Commission for Education and Cultural Exchange (MACECE).

**Second prize student paper award** at the Seventh International Workshop on Principles of Diagnosis (DX-96), Canada.

## **SPONSORED RESEARCH:**

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**Khaled Salah and Mohammed H. Sqalli, "Intelligent Firewall DoS Attacks and Countermeasures"**, Research sponsored by King Fahd University of Petroleum & Minerals under Internal Grant No. ICS/Firewall/361. June 2007- May 2010.

**Mohammed H. Sqalli and Sadiq M. Sait, "Engineering Modern Iterative Heuristics to Solve the OSPF Weight Setting Problem"**, Research sponsored by King Fahd University of Petroleum & Minerals under Fast Track Grant No. SF-2006-26. September 2006- February 2008.

**Mohammed H. Sqalli, "A Framework for Integration of Web-based Network Management and Management by Delegation"**, Research sponsored by King Fahd University of Petroleum & Minerals under Fast Track Grant No. FT/2004-20. September 2004- April 2006.

## **MASTERS THESES SUPERVISION:**

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**Shaik Muzibur Rehman, "A Stochastic Approach to solving the Weight Setting problem in OSPF Networks"**, M. Sc. in Computer Engineering, College of Computer Science & Engineering, KFUPM.

**Louai A. Al-Awami, "A Framework for Reliable and Fault-Tolerant Network Management Architecture"**, M. Sc. in Computer Engineering, College of Computer Science & Engineering, KFUPM. Defended on May 17<sup>th</sup>, 2006.

**Mohammed Aijaz Mohiuddin, "Optimizing weights for OSPF to improve utilization using modern heuristics"**, M. Sc. in Computer Networks, College of Computer Science & Engineering, KFUPM. Defended on September 21<sup>st</sup>, 2005.

**Shaik Sirajuddin, "Extensions to XML-based Network Management"**, M. Sc. in Computer Engineering, College of Computer Science & Engineering, KFUPM. Defended on March 9<sup>th</sup>, 2005.

## **MASTERS THESES COMMITTEE MEMBERSHIP:**

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**Bilal Hussein Hasan AbuQadous, "A Study on Cross-Layer Optimization for TCP over Wireless Networks"**, M. Sc. in Computer Engineering, College of Computer Science & Engineering, KFUPM. Defended on May 14<sup>th</sup>, 2007.

**Abdul-Subhan Abdul-Majid**, "Designing Cellular Mobile Network Using Modern Heuristics", M. Sc. in Computer Networks, College of Computer Science & Engineering, KFUPM. Defended on June 1<sup>st</sup>, 2005.

**Itrat Rasool Quadri**, "Measurement-based Comparison between VoIPoMPLS and VoIP using Software Routers", M. Sc. in Computer Networks, College of Computer Science & Engineering, KFUPM. Defended on October 2<sup>nd</sup>, 2004.

#### **SENIOR DESIGN PROJECTS:**

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**Abdulaziz Al-Baiz, Abdullah Al-Syed, Ahmad Al-Baba, and Zaid Zuraigat**, "Firewall DoS Attacker System", spring 2007. (Co-supervised with Dr. Khaled Salah)

**Ahmad Salam AlRefai**, "Denial of Service Attacks Tracer (DoS-AT)", fall/spring 2006.

**Husain Al-Helal, Abdullah Al-Nemr, Ahmad Al-Ogbi, and Husain Wadu**, "Wireless LAN Topology Discovery System (WTDS)", spring 2006. (Co-supervised with Dr. Ashraf Mahmoud)

**Mohammad Zahri, Muhammad Al-Muhanna, Fuaad Al-Mahfoudh, and Mansour Al-Obaidi**, "Peer-to-Peer Network Management System (P2P-NMS)", spring 2006.

**Sinan M. Hussain and Mohammad Sukkar**, "Network Topology Discovery System (NTDS)", fall 2004.

**Abdullah Basalamah and Ahmad Al-Amoudi**, "Web-based Network Performance Grapher (WNPG)", spring 2004.

**Muhammad Al-Mulhem and Muhammad Shuaib Siddiqui**, "Web-based SNMP Statistics Collector", fall 2003.

#### **JOURNAL/MAGAZINE PUBLICATIONS:**

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**Shaik Sirajuddin, and Mohammed H. Sqalli**, "Distributed XML-based Network Management using JPVM". International Journal of Network Management (IJNM), John Wiley & Sons, Inc. Volume 16, Issue 4, July/August 2006, Pages: 263-277.

**Syed M. S. Islam, Mohammed H. Sqalli, and Sohel Khan**, "Modeling and Formal Verification of DHCP Using SPIN". International Journal of Computer Science & Applications (IJCSA), Volume 3, No. 2, June 2006, Pages: 145-159.

**Cynthia Marling, Mohammed Sqalli, Edwina Rissland, Hector Muñoz-Avila, and David Aha**, "Case-Based Reasoning Integrations". *AI Magazine*, Volume 23, Issue 1, Spring 2002, 69-86.

**Mohammed H. Sqalli, and Eugene C. Freuder**, "A Constraint Satisfaction Model for Testing Emulated LANs in ATM Networks". *Canadian Artificial Intelligence Magazine* on AI in Network Management. No. 41, Spring/Summer 1997. This paper was also published in Working Papers of the Seventh International Workshop on Principles of Diagnosis (*DX-96*), October 13-16, 1996, Val Morin, Quebec, Canada.

## CONFERENCE PUBLICATIONS:

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**Sadiq M. Sait, Mohammed H. Sqalli, and Mohammed Aijaz Mohiuddin, “An Evolutionary algorithm to Multi-objective OSPF Weight Setting Problem”,** the 19th ACS Australian Joint Conference on Artificial Intelligence (*AI-2006*), Hobart, Tasmania, Australia, December 4-8, 2006.

**Mohammed H. Sqalli, Sadiq M. Sait, and Mohammed Aijaz Mohiuddin, “An Enhanced Estimator to Multi-objective OSPF Weight Setting Problem”,** The 10th IEEE/IFIP Network Operations and Management Symposium (*NOMS-2006*), April 3-7, 2006, Vancouver, Canada.

**Mohammed H. Sqalli, and Shaik Sirajuddin, “An Adaptive Load-balancing Approach to XML-based Network Management using JPVM”,** The 13<sup>th</sup> IEEE International Conference on Networks (*ICON 2005*), November 16-18, 2005, Kuala Lumpur, Malaysia.

**Mohammed H. Sqalli, and Shaik Sirajuddin, “Static Weighted Load-balancing for XML-based Network Management using JPVM”,** The 8th IFIP/IEEE International Conference on Management of Multimedia Networks and Services (*MMNS 2005*), J. Dalmau and G. Hasegawa (Eds.): LNCS 3754, pp. 228 – 241, October 24-26, 2005, Barcelona, Spain.

**Syed M. S. Islam, Mohammed H. Sqalli, and Sohel Khan, “Simulation and Formal Verification of DHCP”,** Information and Communication Technologies International Symposium (*ICTIS-2005*), June 3-6, 2005, Tetouan, Morocco.

**Shaik Sirajuddin, and Mohammed H. Sqalli, “Comparison of CSV and DOM Tree Approaches in XML-based Network Management”,** The 12th IEEE International Conference on Telecommunications (*ICT 2005*), May 3 - 6, 2005, Cape Town, South Africa.

**Mohammed H. Sqalli, and Shaik Sirajuddin, “Framework for Extensions to XML-based Network Management”,** International Conference on Information & Computer Science (*ICICS 2004*), Nov. 29 - Dec. 1, 2004, Dhahran, Saudi Arabia.

**Mohammed H. Sqalli, and Eugene C. Freuder, “Case-Based Reasoning to Enhance Diagnosis and CSP Model Debugging in Interoperability Testing: ADIOP”,** The IASTED International Conference on Intelligent Systems & Control (*ISC-2003*), June 25-27, 2003, Salzburg, Austria.

**Mohammed H. Sqalli, and Eugene C. Freuder, “Constraint-Based Modeling of InterOperability Problems Using an Object-Oriented Approach”,** The Thirteenth Innovative Applications of Artificial Intelligence Conference on Artificial Intelligence (*IAAI-01*), August 7-9, 2001, Seattle, Washington.

**Mohammed H. Sqalli, and Eugene C. Freuder, “Solving InterOperability Problems Using Object-Oriented CSP Modeling”,** The *IJCAI-01* Workshop on Modelling and Solving Problems with Constraints, August 5-6, 2001, Seattle, Washington.

**Mohammed H. Sqalli, Lisa Purvis, and Eugene C. Freuder, “Survey of Applications Integrating Constraint Satisfaction and Case-Based Reasoning”,** The First International Conference and Exhibition on the Practical Application of Constraint Technologies and Logic Programming (*PACLP99*), April 19-21, 1999, London, UK.

**Mohammed H. Sqalli, and Eugene C. Freuder, “Integration of CSP and CBR to Compensate for Incompleteness and Incorrectness of Models”.** The *AAAI-98* Spring Symposium on Multimodal Reasoning, March 23-25, 1998, Stanford University, California, USA.

**Mohammed H. Sqalli, and Eugene C. Freuder, “Inference-Based Constraint Satisfaction Supports Explanation”.** The Thirteenth National Conference on Artificial Intelligence (*AAAI-96*), August 4-8, 1996, Portland, Oregon, USA.

#### **PROFESSIONAL ACTIVITIES:**

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- Member of the International Technical Advisory Committee of the 4<sup>th</sup> IEEE GCC Conference, Manama, Bahrain, November 11-14, 2007.
- Member of the Technical Program Committee of the IEEE Global Information Infrastructure Symposium (GIIS '2007), Marrakech, Morocco, July 2-6, 2007.
- Member of the International Program Committee of the 3<sup>rd</sup> International Conference on Information Technology (ICIT 2007), Amman, Jordan, May 9-11, 2007.
- Member of the Technical Program Committee of the 8<sup>th</sup> International Symposium on System and Information Security (SSI'2006), Sao Jose dos Campos, Sao Paulo, Brazil, November 08-10, 2006.
- Member of the Board of Reviewers for the 13<sup>th</sup> International Conference on Telecommunications (ICT-2006), Funchal, Madeira island, Portugal, May 9-12, 2006.
- Sponsoring Professor for OPNET at KFUPM, 2002-2007
- Cisco Certified Network Academy (CCNA) instructor, 2005-2006

#### **REFEREEING OF PUBLICATIONS:**

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- ACM reviewer since February 2005.
- International Journal of Network Management (IJNM)
- Arabian Journal of Science and Engineering (AJSE)
- Special Issue of Elsevier Computer Communications on Monitoring and Measurements of IP Networks
- “The Handbook of Information Security”, Wiley Publishers
- Technical Paper Reviewer of the 14<sup>th</sup> IEEE International Conference On Telecommunications and the 8<sup>th</sup> IEEE Malaysia International Conference on Communications (ICT-MICC 2007), Penang, Malaysia, May 14-17, 2007.
- International Conference on Computer Networks and Mobile Computing (ICCNMC), 2005
- The International Conference on Information and Computer Science (ICICS), 2004
- 2<sup>nd</sup> IEEE-GCC Conference, 2005
- The 13<sup>th</sup> IEEE International Conference on Telecommunications (ICT), 2006

#### **IT CONSULTING:**

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- Saudi Telecom Company (STC), Data Network Infrastructure and Management, 2003

## **COMMITTEES:**

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- Chairman, CCSE Learning and Teaching Committee, 2006-2007
- Member, COE Textbook Committee, 2006-2007
- Member, CCSE Learning and Teaching Committee, 2004-2006
- Member, Joint ICS/COE (CSE) Programs Coordination Committee, 2004-2005
- Member, COE Undergraduate & Textbook Committee, 2005-2006
- Member, COE Research Committee, 2002-2005
- Member, COE Curriculum Development Committee, 2004-2005
- Member, COE Graduating Students & Alumni Committee, 2004-2005
- Chairman, CCSE Network Planning Committee, 2003-2004
- Member, COE Faculty Search Committee, 2003-2004
- Member, CCSE Research and Applied Projects Committee, 2002-2003