

Dr. Ali Husein El-Mousa

PERSONAL INFORMATION

Nationality: Jordanian.
Age: 45
Place of Birth: Irbed, Jordan.
Marital Status: Married with three children

EDUCATION

1992 – 1996 University of London, Kings College London, London, UK

Ph.D. in Electrical Engineering (Computer Systems)

The thesis was concerned with the hardware implementation of Artificial Neural Networks systems. Supervisor Prof. Trevor Clarkson

1991 – 1992 University of London, Kings College London, London, UK

M.Sc. in Digital Electronics and Communications

With Distinction. Supervisor Prof. Trevor Clarkson

1982 – 1987 University of Jordan, Amman, Jordan

B.Sc. in Electrical Engineering

With emphasis on communications and computer engineering

PROFESSIONAL EXPERIENCE

1996 - Present University of Jordan, Amman, Jordan

Assistant Professor in the Computer Engineering Department

I teach both at the undergraduate and postgraduate level courses in Computer Networks and Artificial Neural Networks. At the undergraduate level I teach courses in Electronics, Electrical Measurements, Circuits, Digital Design, Microprocessors, Assembly Language programming, Computer Organization and Embedded systems. I supervise students undertaking graduation projects. I also supervise graduate students conducting research.

2008- 2009 University of Jordan Amman, Jordan

Manager University of Jordan Campus and Hospital Internal Computer Network Upgrade Project

Responsible for the proper implementation and operation for this 1.5 Million Dollar project. Includes installation and upgrade of core routers and switches and the installation of new fiber optic lines and UTP cables.

2005 – 2007 University of Jordan Amman, Jordan

Assistant to the Dean of the Faculty of Engineering & Technology for Computing and Development Affairs

Responsible for the Faculty of Engineering Computer Network, Computing laboratories, system security, and administration. Also, responsible for defining technical specifications, future expansion and requirements for networks, computing requirements and maintenance.

1988 – 1988 Computer & Engineering Bureau, Amman, Jordan

R & D Engineer (part-time)

I was responsible for developing special programs to Arabize the LCD displays of portable computers. I also worked as a quality control engineer of end products.

1987 - 1991 Al-Sharif Electronics Servicing Centre Amman, Jordan

R & D and Maintenance Engineer (part-time)

Redesigned and implemented existing communications modulators and power amplifiers used in audio and video distribution networks for local major five star hotels. Redesigned and fabricated the necessary printed circuit boards at home in my own PCB lab. Also serviced wired and wireless phones and other communications equipment.

1987 - 1989 Jordan Armed Forces, Amman, Jordan

Maintenance Engineer

Serviced and maintained printing machinery including Heidelberg type offset machines, Compugraphic type computer typesetting equipment, and Stahl type folding machines.

1989 - 1990 Contracting and Engineering Services Company Amman, Jordan

R & D Engineer (Part-Time)

Designed and implemented a digitally controlled parking-lot supervisory system for the Zarqa branch of the Housing Bank. Designed and fabricated the required printed circuit boards and supervised the implementation of the system.

1990 - 1991 Arab Drip Irrigation Company, Amman, Jordan

Design Engineer (part-time)

Designed and implemented a computer controlled laboratory grade testing system for the end product of the company (drip irrigation pipes) according to ISO standards. The project involved designing a special data acquisition system together with a computer controlled centre for operation. I was also responsible for writing the control software and implementing the system. The required printed circuits were designed and fabricated at home in my own lab.

1990 – 1991 University of Jordan. E. E. Dept., Amman, Jordan

Teaching Assistant

Responsible for the supervision of students in the Microprocessor Lab. and the Digital design Lab. I was also the supervisor for the Electrical Engineering Department's printed circuit lab. I designed and fabricated printed circuit boards for projects of both undergraduate and graduate students and was responsible for maintaining the lab and its equipment.

1997-1997 Arab Engineers, Amman, Jordan

Design Engineer

Designed and implemented a total control solution using Siemens type Programmable Logic Controllers (PLC) for the control of the production line of drip irrigation plastic pipes assembly line. Used step 7 ladder logic to implement the design on S7-200 series PLCs. Also, programmed the HMI control panel of type Siemens TD200. The product was deployed in Tunisia, Egypt and Saudi Arabia.

2002 – 2003 Ministry of Education, Jordan

Technical Consultant

Worked as a technical consultant for the Minister of Education. Was responsible for designing and specifying the requirements for establishing computer labs, computer curriculum, and data communication connectivity for all the public schools in the country. Also, worked on specifying the requirements for incorporating IT infrastructure into the day-to-day operations of the ministry.

2002 – 2006 Palestine Establishment for Automation and Control

Technical Manager and Lead Designer

Worked as a technical consultant to upgrade and enhance the main product of the

company which is an embedded system based lift controller. Introduced new concepts in the design like incorporating FPGAs and 1-wire solutions to reduce the size, lower the cost of production and enhance the capability. Worked on a project to design, implement and deploy an electronic detection and scoring system for the Jordan Army small arms multi-lane firing ranges. I was responsible for the overall design and technical management of the project. The project involves the real time detection of the position of bullets at their respective targets and the accurate display of that position on local monitors for each lane, together with the exclusion of all errors associated with the system. The design involves the use of both high-tech design products such as high performance microcontrollers, FPGAs and special advanced software design tools such as Xilinx ISE software development tools, together with high performance software tools for embedded systems such as Microchips C18 C language compiler. The system was successfully implemented and tested in the Jordan armed forces.

**AREAS OF
EXPERTISE AND
STRENGTH**

Areas of Expertise

Embedded Systems Design and Implementation.

Computer Networks.

Digital System Design and Implementation using FPGA and CPLD.

Computer Interfacing and Data Acquisition Systems.

Computer Applications Analysis and Development.

Printed circuits design and manufacturing.

Programmable Logic Controller system design and implementation.

Strength

- Strong combination of academic and industrial experience through work in Universities and Industry.
- Formal training and education in both Electrical Engineering and Computer Science.
- Ability to teach a wide range of modules in Electrical Engineering and Computer Science.
- Experience in establishing and enhancing both postgraduate and undergraduate programs.
- Administrative capabilities and experience in management, leadership and supervision.
- Background and preparation suitable for undertaking multidisciplinary research projects and providing effective guidance.
- Excellent communication skills and fast adaptation with new teamwork environments.

**SCIENTIFIC AND
ACADEMIC
ACTIVITIES**

Conferences:

- Member of the International committee of the following conferences:
 - The 15th IEEE Mediterranean Electrotechnical conference, Malta, April 2010.
 - 7th International Multi-Conference on Systems, Signals and Devices SSD-10, Amman, Jordan, June 2010.
 - IEEE AFRICON, Nairobi, Kenya, September 2009.
 - The 3rd Jordan International Electrical & Electronic Engineering Conference JIEEEC'98
- Presented papers in the following conferences:
 - The International Conference on Information and Communications Systems (ICICS2009), December, 2009, Amman, Jordan.
 - World Congress on Engineering 2009 (WCE 2009), July, 2009, London, U.K.
 - IEEE/SSD08 Multi-Conference on Systems, Signals and Devices, Amman-Jordan. July, 2008.
 - The World Congress on Engineering (WCE 2008), July, 2008, London, UK.
 - The World Congress on Engineering (WCE 2007), July, 2007, London, UK. I was also session chair.
 - IEEE/ACS International Conference on Computer Systems and Applications (AICCSA 2007), May, 2007, Amman, Jordan.

- International Arab Conference on Information Technology (ACIT'2006), December, 2006, Irbid, Jordan.
- The 4th International Conference on Computational Aspects and their Applications in Electrical Engineering (CATAEE 2002), March, 2002.
- The 2001 International Arab Conference on Information Technology (ACIT'2001), Irbid, Jordan.
- The 4th Jordanian International Electrical & Electronics Engineering Conference (JIEEEEC 2001), April, 2001, Amman, Jordan
- 1st Workshop on Information Technology in Higher Education, University of Jordan, Amman, 1999.
- 1st Middle East Workshop on Simulation and Modeling, Amman, 1999

Course Development

- Actively contributed in the development of teaching programs for both postgraduate and undergraduate levels in the fields of Electrical, Computer and Mechatronics Engineering. In particular, I was a member of the founding committee of the Computer Engineering Department at the University of Jordan.
- I was responsible for the construction and setting up of the laboratories of, Microcontrollers & Embedded Systems, Computer Networks and Digital Logic. I specified the equipment requirements, wrote and tested the required experiments.
- Actively contributed to the work involved in the specifications and construction of the Microprocessor and assembly language lab, workstation lab and the graduation project lab

ADDITIONAL PROFESSIONAL ACTIVITIES

- Took a two-month training course at the communications college that is part of the Jordan Telecommunications Company. The course involved hands on training in telephone exchange operations and theory using an exchange simulator. It also included involvement in the day to day work of the telephone company technical operations, on-site training in the satellite link station, microwave link stations and actual digital and analogue exchanges.
- Took a one-month hands-on training with the Jordan Electric Utility Company working with their field crews installing power transformers and cabling to a wide variety of customers both industrial and domestic.
- Worked on an on-call basis for the following:
 1. Arab Electrical Industries Company, servicing the control panels of their plastics molding machines.
 2. Arab Engineers Company, servicing control panels for industrial machines.
- In 1997 I worked as a consultant for the Ministry of Higher Education in Jordan as a member on the committee for accreditation of electrical engineering higher education institutions.
- In 1998 I worked as a consultant for the Palestine Automation & Control Company. I verified the technical design of the company's lift controller product and solved EMI and noise problems. I also advised them in the field of printed circuit design and fabrication requirements for their lift controller system products in order for them to meet strict specifications.
- Also in 1998, I was lead designer and implementer in a project for staff members in the Mechanical Engineering Department at the University of Jordan to design, implement a PC-based control system for multiple stepper motors for their research projects. I also designed and supervised the manufacturing of the required printed circuit boards.
- I teach advanced short courses in computer networks (both local and wide area) for local networking companies through the consultative center at the University of Jordan. Also taught courses for CCNA utilizing the CISCO networking academy.
- Approved technical consultant in the area of printed circuit design and manufacturing and

Communications systems in the area of the Middle East by Lloyds Register UK for ISO 9000 approval. Worked on several ISO approval and verification jobs including Lucent Technologies Saudi Arabia, Motorola cellular phones fabrication plant Jordan, and Allo company for phone services Jordan.

- Member of the technical committee for the 3rd Jordan International Electrical & Electronic Engineering Conference JIEEEEC'98.
- Associate editor of the Journal of Mechatronics and Applications, published by Hindawi publishing corporation.
- Technical referee for Dirassat Magazine of the University of Jordan, The Islamic University – Gaza magazine, and The ACS/IEEE International Conference on Computer Systems and Applications (AICCSA).
- Technical referee for International Journal of Modelling and Simulation, published by ACTA Press.
- Member of the committee to design and implement specifications for the construction of the Computer Engineering Department at the University of Jordan. This included the curriculum, Laboratory specifications and human resources requirements.
- Member of the committee to design and specify the requirements of the Laboratories of the Mechatronic program at the Faculty of Engineering & Technology in the University of Jordan.
- Attended a two week specialized training course with the support of Altera company USA in Lebanon in the use of FPGA and CPLD devices in digital design.
- Attended a one week specialized course in London, UK organized by Xilinx company USA in the use of FPGA and CPLD devices in both digital design and digital signal processing.
- Member of the committee composed of various government ministries, universities and nongovernmental organization to put forward recommendations on the future requirements to enhance and advance the ICT sector in Jordan.
- Participated in two cycles of the Faculty for Factory program organized by the Outreach consultation unit at the University of Jordan. I produced two technical feasibility studies for the redesign of end products for a local lift control production company, where I integrated latest available technology in the design to reduced cost, enhance efficiency and reduce board space. Also, implemented a computer network infrastructure for the company.

AWARDS AND HONOURS

- Certificate of merit for the 2009 International Conference of Computer Science and Engineering which is part of the World Congress on Engineering (WCE2009) for the paper "Specification and Modeling of HW/SW CO-Design for Heterogeneous Embedded Systems".
 - Supervised a student project titled "Method and System for Imaging Display and Interface" that won an international prize from the IEEE and a \$1500 honorarium, 2007.
 - Supervised the graduation project that won the first prize in the Engineering category, Jordan Computer Society, Project Title: DESIGN OF ADDRESSABLE USART FOR SoC APPLICATION, 2007.
 - The University of London award for excellence in Advanced Engineering Research in 1992.
 - British Council Fellowship, 1991-1995.
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**PROFESSIONAL
MEMBERSHIPS &
VOLUNTEER
ACTIVITIES**

- IEEE member since 1991, senior member since 2003
- IEEE Computer Society member since 1991
- Chair of the executive committee of IEEE - Jordan Section, 2008 - present
- Vice Chair of the executive committee for IEEE – Jordan Section, 2002- 2007
- University of Jordan IEEE Student Branch Counselor, 2002 – 2009.
- Founder of the IEEE Jordan section communication and Engineering Education society chapters.
- Founder of the IEEE Middle East Student Branch Congress meeting series.
- Chair of the IEEE Jordan Section Engineering Education society chapter, 2009 – present.
- Member of the IEEE Region 8 Student Paper Contest jury April 2010.
- IEEE Region 8 Membership development committee, 2009 – present.
- The mentor for the Jordan University student team for the IEEE Computer Society International Design Competition (CSIDC) 2003
- Jordan Engineers Association member since 1987
- Member of the Ministry of Higher Education’s committee for establishing accreditation criteria for Computer Engineering specialization, 2005.
- Member of the special task force to prepare a detailed report on the reality of cooperative innovation in Jordan, Yarmok University, 2005.
- Attended and participated the activities of the Summer University in Syria under the title “Digital Control Systems, DSP and Wireless Technologies”, Damascus, 18-28/07/2009.
- Attended and participated the activities of the Summer University in Lebanon, Beirut, 14-22/09/2005.
- Attended and participated the activities of the Summer University in Lebanon under the title “FPGA & DSP”, Saida, 20-29/08/2001.
- Presentation titled "Application of Ceramics in the Electronics Industry" during the 10th Scientific Week organized by The Higher Council for Science and Technology, September, 2004.
- Organizer of the series of scientific lectures held alongside the Middle East Technology Show (METS 2008) with the cooperation of the Jordan Computer Society in cooperation with IEEE - Jordan Section, Dec 2008.
- Organizer of the series of scientific lectures held alongside the Middle East Technology Show (METS 2009) with the cooperation of the Jordan Computer Society in cooperation with IEEE - Jordan Section, Nov 2009.
- Presentation titled "The Role of R&D in Advancing Local Industries" organized by the Queen Rania Center for Entrepreneurship (QRCE), El-Hassan Science City, Amman, Jordan, Oct 2007.
- Presentation titled "Consciousness, the Thought process and Artificial Neural Networks" organized by the IEEE - Jordan Section and Jordan Engineers Association, June 2007.
- Presentation titled "Importance of Security Policies to Organizations", during the 4th Engineering Day, Mechatronics and Secure Wireless Networks, Philadelphia University, Amman, June, 2009.

- Presentation titled "The Developing World of Embedded Computing", The University of Jordan, Dec 2006.
- Presentation titled "Lift Controller Technical Upgrade Study: An Example Of Academic-Industrial Fruitful Cooperation" during The ICT Innovative Partnership Symposium organized by Yarmouk University, Amman, Dec 2004.

**CONTINUING
EDUCATION AND
PROFESSIONAL
CERTIFICATIONS**

- Technical English Program Workshop, IEEE Educational Activities, St. Petersburg, Russia, Oct 2-4, 2009
- Interpersonal Communications Skills, Jordan Computer Society, August 2008.
- Cisco Certified Network Associate, Nov 2007
- Cisco Certified Academy Instructor (CCAI) for CCNA certification, June 2008.
- Xilinx University Professor (XUP) on FPGA design Techniques, London, UK , July, 2003
- Took seven courses in teaching methodology and curriculum development, University of Jordan, 1989 – 1991.
- CISCO CCNA certified. Certificate verification number: 393904198487HKXH.
- CISCO Certified Academy Instructor (CCAI)

LANGUAGES

- Arabic and English fluently.
- French and Italian modest.

**PARTIAL LIST OF
PUBLICATIONS**

Journals

1	Ali H. El-Mousa, Nasser Anssari, Ashraf Al-Suyyagh, Hamzah Al-Zubi, "A High Speed Reconfigurable USART IP Core with Support for Multi-Drop Networks" WSEAS Transactions on Systems, Accepted for publication.
2	Ali H. El-Mousa, Ashraf Al-Suyyagh , "Embedded Systems Education for Multiple Disciplines", Journal of Computer Science 6 (2): 186-193, 2010.
3	Ali H. El-Mousa, Zahra J. Muhsin and Majid A. Al-Taee, "A Web-Based Rapid Prototyping Workflow Management Information System for Computer Repair and Maintenance", Journal of Computer Science 4(12): 991-998, 2008

Conferences

1	Ala' F. Khalifeh, Ali H. El-Mousa, and Adnan Shaout, "A Telemedicine Video Conferencing System: Implementation Challenges and Solutions", Proceedings of The International Conference on Information and Communications Systems (ICICS2009), December 20-22, 2009, Amman, Jordan
2	Adnan Shaout, Ali H. El-Mousa., and Khalid Mattar, " Specification and Modeling of HW/SW CO-Design for Heterogeneous Embedded Systems", Proceedings of the World Congress on Engineering 2009 (WCE 2009),Vol I, pp273-278, July 1 - 3, 2009, London, U.K.
3	Muhsin ZJ, El-Mousa AH and Al-Taee MA, "A Distributed Workflow Management System Utilizing Computational Intelligence for Decision Support", Proc. IEEE/SSD08 Multi-Conference on Systems, Signals and Devices, Amman-Jordan. July 20-23, 2008.
4	Z. J. Muhsin, A. H. El-Mousa, M. A. Al-Taee and I. Potts "Web-based Workflow Management Information System for Computer Repair and Maintenance at the University of Jordan", The first Graduate Research Studies Conference, Sept.4-6, 2007, Amman, Jordan

5	Ali H. El-Mousa, Nasser Anssari, Ashraf Al-Suyyagh and Hamzah Al-Zubi "The Design and Implementation of a Reconfigurable USART IP Core for Embedded Computing With Support for Networks", Proceedings of the World Congress on Engineering 2008, London, UK.
6	Ala Khalifeh and A. El-Mousa, "Performance Evaluation of VoIP using Shortest-Widest and Modified Widest-Shortest QoS Routing Algorithms" Proceedings of the World Congress on Engineering 2007 (WCE 2007), Vol. I pp232-237, July 2-4, 2007, London, UK.
7	Ala Khalifeh and A. El-Mousa, "QoS Routing of VoIP using a Modified Widest-Shortest Routing Algorithm", Proceedings of the 2007 IEEE/ACS International Conference on Computer Systems and Applications (AICCSA 2007), pp. 116-123, May 13-16, 2007, Amman, Jordan..
8	Zahra Muhsin, A. El-Mousa, and Ian Potts, "Development of a Web Based Database-Centric Workflow Management System Using Rapid Prototyping Approach", Proceedings of the 2007 IEEE/ACS International Conference on Computer Systems and Applications (AICCSA 2007).
9	A. H. El-Mousa, "Practical Steps for Advancing ICT REACH Initiative in Jordan", Proceedings of the 2006 International Arab Conference on Information Technology (ACIT'2006), December 19-21, 2006, Irbid, Jordan.
10	A. H. El-Mousa, "On the Capabilities of a Reconfigurable pRAM-based Neurocomputer", Proceedings of the 4th International Conference on Computational Aspects and their Applications in Electrical Engineering (CATAEE 2002), pp. 106-108, March 19-21, 2002, Amman, Jordan.
11	A. H. El-Mousa, "Advanced Information Searching strategies using the Internet", proceedings of the 2001 International Arab Conference on Information Technology (ACIT'2001), pp. 373-379, Irbid, Jordan.
12	A. H. El-Mousa, "A Dynamically Reconfigurable Neural Network Hardware System using the pRAM-256". Proceedings of the 4th Jordanian International Electrical & Electronics Engineering Conference (JIEEEEC 2001), pp. 341-344, April 16-18, 2001, Amman, Jordan.
13	A. H. El-Mousa, "Information Sources on the Internet", 1 st Workshop on Information Technology in Higher Education, University of Jordan, Amman, pp 11-13, 1999.
14	A. H. El-Mousa, "A Dynamically Reconfigurable Hardware System for Neural Network Simulation", 1 st Middle East Workshop on Simulation and Modeling, Amman, pp. 74-77, 1999.
15	Ashraf Suyyagh, Ali El-Mousa, "AD HOC Networks Security Challenges", the 7 th International Multi-Conference on Systems, Signals & Devices (SSD10), June 27-30, 2010, accepted for presentation and publication.

Chapters in Books

1	A. H. El-Mousa, N. Anssari, A. Al-Suyyagh and H. Al-Zubi, "The Design of a USART IP Core", in Advances in Electrical Engineering and Computational Science, pp. 365-376, Springer 2009.
2	Adnan Shaout, Ali H. El-Mousa, Khalid Mattar, "Models of Computation for Heterogeneous Embedded Systems", in Electronic Engineering and Computing Technology, Springer, to be published 2010.

References **Are available upon request.**