

Hesham Abdulaziz Al-Twaijry Ph.D

Contact Information

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Education

Ph.D Electrical Engineering

1997, Stanford University, Stanford, CA, USA
Thesis title : “*Area and Performance Optimized CMOS Multipliers*”

M.S. Electrical Engineering

1993, Stanford University. Stanford, CA, USA

B.Sc. Computer Engineering

1990, King Saud University, Riyadh, Saudi Arabia

Awards

- Graduated at the top of the university class with "First class distinction ”at King Saud University.
- Honored by the Saudi Computer Society in 1990.
- Recipient of HRH Prince Bandar bin Sultan award for academic excellence.

Professional Experience

- Consultant, Vice Minister of Education for Universities and Research (Nov 2019- Present)
- General Director of General Directorate for Degree Equalization, Ministry of Education (Jan 2017 – Nov 2019)
- Associate Professor (2014 – Present)
- Vice Dean, King Abdullah Institute for Research and Consulting Services (2013 – 2015)
- Computer Engineering Department Chairman (2010 – 2013)
- Assistant Professor King Saud University, Computer Engineering Department (1998 - 2014)
- Assistant Professor King Khalid Military Academy (1997 – 1998)
- SUN system administrator for the Flynn research group at Stanford University. (1995-1997)
- Research assistant at Stanford University (1994-1997)
- Graduate Student (1991-1994)
- Teaching Assistant at the King Khaled Military Academy (1990-1997)

Additional Professional Experience

- Member Board of Trustees for Prince Mohammed bin Fahd University. (2016 – Present)
- Member Board of Trustees for Onaizh Colleges (2016 – Present)
- Member of Scientific Council King Saud University (2016 – 2018)
- Member of Scientific Committee for Engineering and Computer – Degree Qualification Committee, Ministry of Civil Service (2016 – Present)
- Part time consultant at Education Evaluation Commission (2017 – 2018)
- Associate Editor Journal of King Saud University Journal – Computer and Information Science (2015 – Present)
- Engineering and IT Scientific Committee member, Ministry of Civil Affairs (2015 – Present)
- IT Programs Degree Evaluation Committee member for Ministry of Higher Education (2014 – Present)
- Engineering and IT Programs Degree Evaluation Committee member for Ministry of Higher Education (2011 – 2014)
- EFQM Program assessor. (2011 – Present)
- Member of Team that developed MS programs in Information Security and Network Security, Naif Arab University for Security Sciences (2014)
- Committee member for human resources, computer engineering department (2014 – Present)
- Committee chair for graduate computer engineering ABET accreditation committee (2012 – Present)
- Committee member for undergraduate computer engineering ABET accreditation committee (2012 – Present)
- Committee chair for undergraduate computer engineering ABET accreditation committee (2010 – 2012)
- Member of college ABET accreditation committee (2010 – 2013)
- Member of university computer committee (2009 – 2013)
- Committee Chairmen for development of two new Masters Programs for the college of computer and information sciences. (2008)
- Responsible for updating of Computer Engineering curriculum.(2008)
- Committee Chairmen for development of Software Engineering department. (Developed the curriculum, faculty recruitment.) (2006)
- Committee Chairmen for update of the B.Sc. Computer Engineering program.(2003)
- Committee member for update of the M.S. Computer Engineering program.(2006)
- Head of the consultant team that developed the plan for Saudi Virtual University for the National E-learning Center (2009)
- Member of the consultant team that supervised the installation of the software for the National E-learning Center (2006 – 2009)
- Member of the consultant team that supervised computer IT project for Imam Mohammed bin Saud University – Installation of an academic software package (Banner), computer network and hardware. (2003 – 2007)
- Team leader for the consultant team for ministry of health – Several studies, project management (2005 – 2007)
- Part-time consultant for Advanced Electronics Company (2000 - 2006) – development of several products.
- Committee member in the team that developed the curriculum for the master in health informatics for King Saud bin Abdulaziz University for Medical Studies (2005)
- Developed a CAD tool for the automatic layout of VLSI multipliers. (1997)

- Designed and fabricated a custom VLSI chip in 2.0 μ m MOSIS technology for digital TV filter. (1994)
- Designed and implemented a smart traffic signal controller using an ACTEL Field Programmable Gate Array (FPGA). (1992)
- Built a neural network based Arabic character recognition system. (1990).

Publications

Journals

- **FIR Filter Design Using the Signed-Digit Number System and Carry- Save Adders – A Comparison**, International Journal of Advanced Computer Science and Applications, Vol. 4, No. 12, December 2013
- **(WHASG) Automatic SNORT Signatures Generation by using Honeypot**, Journal Of Computers, Vol. 8, No. 12, pp 3280-3286 December 2013
- **Improved MOESI Snoopy Based Cache Coherence Protocol**, The Arabian Journal for Science and Engineering, September 2013
- **A Rubrics based Quality Improvement Methodology for ABET accreditation**, International Journal of Engineering Education Vol. 28, No. 6, pp. 1266–1273, 2012
- **Bayesian based Admission Control (BAC) Policy for Distributed Video-on -Demand System**, INFORMATION, An International Interdisciplinary Journal Vol.15, No.8, August, 2012
- **Linear probability based admission control policy for video on demand system**, International Journal of the Physical Sciences Vol. 6(36), pp. 8120 - 8129, 30 December, 2011
- **Dynamic Probability Based Admission Control Policy for Distributed Video on Demand System**, International Journal of the Physical Sciences Vol. 6(23), pp. 5432-5441, 9 October, 2011
- **Bayesian Based Intrusion Detection System**, Journal of King Saud University – Computer and Information Sciences (2012) 24, 1–6, July 2011
- **Technology Scaling effects on CMOS multipliers**. IEEE transaction on computers, Vol. 47, No. 11, pp. 1201-1215, November 1998.
- **The SNAP Project: Building Validated Floating-Point Units**. Journal of Universal Computer Science, Vol 4, No 2, pp. 99-109, February 1998.

Conferences

- **Class Based P-persistent Scheme for SmartGrid Load Balancing**. In the Proceedings of The annual Electrical Power and Energy Conference (EPEC 2012), London, Ontario, Canada October, 2012
- **Quality Improvement Using a Rubrics Based Methodology in ABET**. In the Proceedings of 3rd International Conference on Technology Enhanced Learning, Quality of Teaching and Reforming of Education, TECH-EDUCATION 2012, Barcelona, July 2012
- **Multi-Layer Bayesian Based Intrusion Detection System**. In the proceedings of WCECS 2011, San Francisco, USA, October 2011
- **An Implementation of a 2D FIR Filter Using the Signed-Digit Number System**. In proceedings of Saudi International Electronics, Communications and Photonics Conference Riyadh, Saudi Arabia April 2011

- **Determining the best plan to launch the Saudi Virtual University.** In the proceedings of OASIS 2010, Chicago, December 2010
- **An Algorithmic Approach to building Datapath multipliers using (3,2) Counters.** In the proceedings of WVLSI 2000. IEEE computer society, Orlando, USA, April 2000.
- **The SNAP Project: The design of Floating point Arithmetic units.** In the proceedings of the 13th symposium on Computer Arithmetic. Monterey, USA, August 1997.
- **Advances in High Performance Floating-Point Unit Design.** In the proceedings of the 15th IMACS world congress on scientific computation, modeling, and applied mathematics. Berlin, Germany, August 1997.
- **The SNAP Project: Building Validated Floating-Point Units.** In the proceedings of SCAN-97. GAMM/IMACS International symposium on scientific computing, computer arithmetic and validated numerics. Lyon, France, September 1997.
- **The SNAP Project: Towards Sub-nanosecond Arithmetic.** NSF/MIPS conference on experimental research on computer systems. June 1996.

Technical Reports

- **Optimum Placement and Routing of Multiplier Partial Product Trees,** Technical Report: CSL-TR-96-706, Stanford University, September 1996.
- **Technology Scaling effects on Multipliers.** Technical Report CSL-TR-96-698, Stanford University, July 1996.
- **Performance/Area Tradeoffs in Booth Multipliers.** Technical Report CSL-TR-95-684, Stanford University, November 1995.
- **Multipliers and Datapaths.** Technical Report CSL-TR-94-654, Stanford University, December 1994.

Book Chapters

- **Bayesian Based Intrusion Detection Systems** – Book Chapter IAENG Transactions on Engineering Technologies - Special Edition of the World Congress on Engineering and Computer Science 2011
- **Multiplier Topologies,** Advanced Computer Arithmetic Design, Wiley Interscience, ISBN-10: 0471412090, PP 65-100
- **Technology Scaling Effects on Multipliers,** Advanced Computer Arithmetic Design, Wiley Interscience, ISBN-10: 0471412090, PP101-116

Patents

- **Dynamic Probability-Based Admission Control Scheme for Distributed Video on Demand System,** US Patent 8,661,484, February 2014
- **A Multiple-Attributes Classifiers-Based Broadcast Scheme For Vehicular Ad-Hoc Networks,** Applied Ref.: 6674.1.938.18, Filed October 2019