

Mahmood Al-khassaweneh, Ph.D

EDUCATION

2003 – 2007
Michigan State University
PhD in Electrical and Computer Engineering.
Area: Image and Signal Processing, Information security and data hiding.
Research: Image Watermarking.
Thesis title: Image Watermarking in the Time-Frequency domain.
GPA: 3.8 out of 4.

2001 – 2003
Michigan State University
Masters of Science in Electrical and Computer Engineering.
Area: Electrical and Computer Engineering.
GPA: 3.8 out of 4.

1995 – 2000
Jordan University of Science and Technology
Bachelor of Electrical Engineering,
Department rank: 4 out of 150. (Honored)
Specialization rank: 1 out of 77. (Honored)
GPA: 83.8%. (Honored)

Experience

05/2008 – current
Michigan State University.
Electrical and Computer Engineering Department
Visiting assistant professor

08/2007 - current
Yarmouk University, Jordan
Computer Engineering Department
Assistant professor.

05/2007 – 08/2007
Michigan State University.
Electrical and Computer Engineering Department
Visiting assistant professor.

05/2003 – 05/2007
Michigan State University.
Research assistant at the department of Electrical and Computer Engineering.

12/2002 – 5/2003
Michigan State University
Network Engineer, Michigan State University.

01/2002 – 05/2003
Michigan State University.
Grader for Control Systems, Signal Processing and Digital Communications courses.

08/2001 – 01/2002
University Of Arkansas at Little Rock.
Research assistant at the Department of Systems Engineering.

01/2001 – 08/2001
Allied Soft Company, Amman- Jordan.
Software Programmer: implementing several projects using ASP, Java, HTML and Visual basic.

06/2000 – 06/2001 (concurrent)
Oneworld Software Solution Company, Amman- Jordan.
Software Engineer and Team Leader: implementing several projects using ASP, C++/COM and SQL server.

06/1999 – 09/1999
Yarmouk University, Irbid- Jordan.
Computer Engineering Trainee at the Computer Division.

Research Projects

2008 - current
Michigan State University. Department of Electrical and Computer Engineering.

- Using new measures for the functional connectivity of the brain signals to build network models of the brain, Selin Aviyente and Mahmood **Al-khassaweneh**.

2007 - current
Yarmouk University. Department of Computer Engineering.

- A new Image Encryption Scheme based on Using Least Square Approximation Techniques, Mahmood **Al-khassaweneh**.

2003 - 2007
Michigan State University. Department of Electrical Engineering.

- A Joint Time- Frequency Approach For Digital Watermarking, funded by MSU- IRGP, Selin Aviyente and Mahmood **Al-khassaweneh**.

2005 - 2006
Michigan State University. Department of Electrical Engineering.

- Speech Synthesis for Distance Cueing in Audio Displays, funded by Air force, IC-Tech, Inc, Selin Aviyente, Mahmood **Al-khassaweneh**, and Jacob Swary.

2001 – 2002

University of Arkansas at Little Rock. Department of Systems Engineering.

- Smart Antennas For Future Wireless Communications Systems, Hussain Al- Rizzo, Yupu Chan, Kamran Iqbal, Mahmood **Al-Khassaweneh**, and Asim Ahmed.
- Software Defined Radio (SDR) Transceiver Technology, Hussain Al-Rizzo, Amer Al Habsi, and Mahmood **Al-Khassaweneh**.

Publications

- M. **Al-Khassaweneh** and S. Aviyente, “A new Image Encryption Scheme based on Using Least Square Approximation Techniques,” 2008 IEEE International Conference on Electro/Information Technology, 2008.
- M. **Al-khassaweneh**, S. Aviyente, “Time Domain Equivalency for Image Watermarking in the Time-Frequency Domain”, to be submitted to the IEEE Transactions on multimedia.
- M. **Al-khassaweneh**, S. Aviyente, “Joint Space-Frequency Image Watermarking using the Local Autocorrelation Function”, to be submitted to the IEEE Transactions on multimedia.
- M. **Al-Khassaweneh** and S. Aviyente, “Image Watermarking in the Autocorrelation Domain,” ACM Multimedia Conference, Volume 1, 2006, 53 - 58.
- M. **Al-Khassaweneh** and S. Aviyente, “Embedding Multi-Bit Message in the Joint Time-Frequency Domain,” 2006 IEEE International Conference on Electro/Information Technology, Volume 1, 2006, 516 – 519.
- M. **Al-Khassaweneh** and S. Aviyente, “Spatially Adaptive Wavelet Thresholding for Image Watermarking,” Proceedings of IEEE International Conference on Multimedia and Expo, 2006.
- M. **Al-khassaweneh**, S. Aviyente, “Robust Watermarking in the Wigner Domain,” Proceedings of IEEE International Conference on Multimedia and Expo, 2006.
- M. **Al-khassaweneh**, S. Aviyente, “A Time-Frequency Inspired Robust Image Watermarking”, Michigan State University, Electrical and Computer Engineering Poster Day, April, 14, 2005.
- M. **Al-khassaweneh**, S. Aviyente, “Joint Spatial-Spectral Image Watermarking”, Michigan State University CyberSecurity Workshop, Nov, 20, 2004.
- M. **Al-khassaweneh**, S. Aviyente, "A Time-Frequency Based Perceptual and Robust Watermarking Scheme", in Proceedings of EUSIPCO2005, Sep 2005.
- M. **Al-Khassaweneh**, S. Aviyente, “Image Watermarking Based on Wavelet Hard Thresholding”, in Proceedings of EUSIPCO2005, Sep 2005.

- M. **Al-khassaweneh**, S. Aviyente, "A Time-Frequency Inspired Robust Image Watermarking", Signals, Systems and Computers, 2004. Conference Record of the Thirty-Eighth Asilomar Conference, Volume 1, Nov. 7-10, 2004, 392 - 396.
- M. **Al-Khassaweneh**, S. Aviyente, "Robust Watermarking on the joint spatial-spectral domain", in Proceedings of IEEE DSP Workshop, Aug 2004, 297 – 301.

SKILLS

Computer: Working knowledge of programming languages, C, C++, visual C++, Java, Matlab and Visual basic. Highly proficient at Latex, Excel, Word and PowerPoint. Knowledge of Matamatica and Electronics Workbench and experience of HTML, VHDL, VLSI and assembly code.

Presentation: Developed ability to produce reports and presentations to a professional standard.

Analysis & Evaluation: Proficient in assessing data and formulating solutions.

Organisational: Effective at time management and prioritising tasks to achieve deadlines.

Interpersonal/Communication: Strong team working, leadership and communication skills.

Language: Arabic and English.

SELECTED COURSES

Computer Engineering: Computer Interfacing, Assembly programming, Computer networks, VLSI design, Algorithms and hardware implementation, Advanced VLSI design, Computer vision, Pattern recognition, C++, Computer architecture.

Electrical Engineering: Analog and digital communication, digital signal processing and filter design, Linear control systems, Analysis of Stochastic Systems, Time- frequency distribution and wavelet analysis, Advanced topics on statistical signal processing, Discrete time speech signal processing, Detection and estimation theory, Information theory.

Math and Statistics: Probability and statistics, Numerical analysis, Theory of probability and statistics, Linear algebra, Differential equations.

HONORS, SCHOLARSHIPS, and MEMBERSHIPS

- Who's Who for Engineering (2007).
- Graduate School Fellowship, MSU (2006).
- Member of The National Scholars Honor Society (2006 - current).
- Reviewer of the IEEE Transaction on Multimedia.
- Reviewer of the IEEE Transaction on instrumentation and measurements.
- Reviewer of the IEEE conference on Electro/Information Technology.
- Reviewer of the IEEE conference on Image Processing.
- Invited member to the Phi Kappa Phi honor society (2003).
- IEEE member (2003 – current).

- MSU honor's list
http://www.lsj.com/news/schools/030825_honor_5b.html
- Research assistantship from Michigan State University to complete the Ph.D. degree in Electrical and Computer Engineering in USA (2003- current).
- Research assistantship, University of Arkansas, Little Rock (2001- 2002).
- Member at the Jordanian Engineers Association (2000-current).
- Engineering Dean's honor list, Jordan University of Science and Technology (1995, 1997, 1999).
- King Hussein Fellowship to complete the Bachelor degree in Electrical Engineering at Jordan University of Science and Technology (1995-2000).

REFERENCES:

- Dr. Selin Aviyente, Assistant professor
 - Department of Electrical and Computer Engineering Michigan State University, East Lansing, Michigan 48824.
 - E-mail: aviyente@egr.msu.edu.
 - Tel: 517-355-7649.
- Dr. Radha Hayder, Professor
 - Department of Electrical and Computer Engineering Michigan State University, East Lansing, Michigan 48824.
 - E-mail: radha@egr.msu.edu.
 - Tel: 517-432-9958.
- Dr. John. R. Deller, Professor
 - Department of Electrical and Computer Engineering Michigan State University, East Lansing, Michigan 48823.
 - E-mail: deller@msu.edu.
 - Tel: 517-353-8840.
- Dr. Karim Oweiss, Assistant professor
 - Department of Electrical and Computer Engineering. Michigan State University, East Lansing, Michigan 48824.
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 - Tel: 517-432-8137.
- Dr. Gail Erten, Director of research and development
 - Optical Physics Company, 26610 Agoura Road, Suite 240. Calabasas, California 91302.
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- Dr. Mohammad M. Banat, Associate professor,
 - Department of Electrical Engineering, Jordan University of Science and Technology, P. O. Box 3030, Irbid 22110 - Jordan.
 - E-mail: m.banat@iecc.org.
 - Tel: 962-2-720-1000 Ext. 22508