CURRICULUM VITAE

Taha Abdelshafy Abdelhakim Khalaf

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Education:

May 2011: Ph.D, Electrical and Computer Engineering, Iowa State University, Iowa, USA.

Dec. 2004: M.Sc., Department of Electrical Engineering, Assiut University, Egypt.

May 2000: B.Sc., Department of Electrical Engineering, Assiut University, Egypt. With commutative average grade: very good with honor's degree (82.3%).

Ph.D Thesis: Security and prioritization in multiple access relay networks.

M.Sc. Thesis: Adaptive orthogonal transforms and its applications in speech and image processing.

B. Sc. Project entitle: Control of Elevator, Traffic light, and Boiler using PLC.

Research interests:

Wireless Communications, Digital Signal Processing, and Image Processing. Currently I focus on:

- Cooperative Communications and Relay Networks.
- Cognitive Radio
- Physical Layer Security.
- Network Coding.
- Message Ferrying

Journal Publications:

1. Taha Khalaf, Sang Wu Kim, Alaa E. Abdel-Hakim "Tradeoff Between Reliability and Security in Multi-Access Relay Networks under Falsified Data Injection Attacks," Accepted *IEEE Transactions* on *Information Forensics and Security*, 2013

2. Sang Wu Kim, Taha Khalaf, and Sangmun Kim, "MAP Detection of Misbehaving Relay inWireless Multiple Access Relay Networks", IEEE Communications letters, Vol. 15, NO. 3, MARCH 2011.

3. Taha Khalaf and Safwat Ramzy, "Decoding Scheme for Relay Networks with Parity Forwarding Cooperation Protocol," submitted to *IET communications*

4. Taha Khalaf and safwat Ramzy "Asymptotic Error Rate for Network-Coded Multiple Access Relay Networks with MAP Decoder," submitted to IEEE transactions on wireless communications.

Conference Publications:

1. Taha Khalaf, "Error Analysis for Decode and Forward Cooperation Protocol with MAP Decoding," submitted to *IEEE WCNC*.

2. Taha Khalaf, "Performance of Maximum Likelihood Decoder in Network Coded Cooperative Communications," Accepted to *IEEE Wireless Days*, Valencia, Spain, 2013.

3. Taha Khalaf, "Confidential Spatial Multiplexing in the Presence of Eavesdropper," Accepted IEEE Milcom 2013.

4. Taha Khalaf, "Implementation of Fountain Codes in Wireless Relay Networks", Accepted IEEE SIECPC13, April, 2013, Riyadh, KSA.

5. Taha Khalaf, Young Jin Chun, and Dong In Kim, "MIMO Relaying in Random Linear Coded Multiple-Access Relay Network", ACM International Conference on Ubiquitous Information Management and Communication (ICUIMC) 2012 Kuala Lumpur, Malaysia

6. Taha Khalaf, Sang W. Kim, and L. J. Greenstein "Prioritized analog cooperative relaying in multiple access relay networks," IEEE Milcom, Oct. 2010, San Jose, CA, USA.

7. Taha Khalaf, and Sang Wu Kim, "Error Probability in Multi-Source, Multi-Relay Networks under Falsified Data Injection Attacks," in the proceedings of IEEE MILCOM 2008, San Diego, CA, USA, 2008.

8. Taha Khalaf, and Sang Wu Kim, "Delay Analysis in Message Ferrying System," proceedings ofIEEE EIT, Ames, Iowa, USA, 333 – 336, May, 2008.

9. Taha Abdelhakim Khalaf, and S. A. Zekavat, "On the Error Floor of MC-CDMA Systems over Rayleigh Fading Channels: Uplink vs. Downlink," proceedings *IEEE ICSPC*, Dubai, UAE, 26 – 27 Nov. 2007

10. T. Haweel, T. Abdelhakim Khalaf, H. Selim and T. Abdelhamid " Adaptive LMS Based 2-D Discrete Orthogonal Transforms,'' *Journal of Engineering Scince*, vol. 30, no. 3, PP. 783-798, 2002.

Funded Research Projects:

1- "Boosting the Performance of Dynamic Spectrum Allocation Networks" initial acceptance from Egyptian national telecommunications regulatory authority (NTRA).

Graduate Students:

1- Safwat Mohammed Ramzy, Ph.D. student, Thesis "Optimal Decoder for Multiple Access Relay Network", Expected graduation May 2014.

2- Hazem Ibrahim, M.Sc. student, Thesis "Optimal Positioning of Relays and Antennas in Wireless Cooperative Communication Networks" , Expected graduation May 2014.

3- Mohammed Younis, M.Sc. student, Thesis "Low Complexity Compressive Sensing Technique for Cognitive Radio Networks", Expected graduation May 2014.

Ph.D. Course (All are graduate level):

1. Statistical Signal Processing (A)
2. Computer Network (A)
3. Wireless Communications (A)
4. Detection and Estimation (A)
5. Information Theory and coding (B)
6. Advanced Communications (A)
7. Digital Signal Processing (A)
8. Cryptography (A)
9. Steganography and Watermarking (A)
10. Error Correction Codes (A)
11. Wireless Network Security (A)
12. Time Series Analysis (A-)
13. Game Theory (A)

Total GPA: 3.96/4

Professional Experience:

June 2011-Now: Assistant Professor with the department of electrical engineering, Assiut University, Assiut Egypt.

August 2009-May 2011: Research assistant, Iowa state university, USA

December 2000 –August 2006: Teaching Assistant with the Electric Engineering Department, Faculty of Engineering, Assiut University, Assiut, Egypt.

Teaching experience:

I taught the following courses in Assiut university and Sohag University

1. Signals and Systems
2. Analog Communications
3. Probability Theory and Random Process
4. Digital Signal Processing
5. Wireless Communications
6. Information theory and coding
7. Digital communications
8. Electronic Labs
9. Communications Lab
10. Electronic instrumentations
11. Measurement transducers
12. Advanced wireless communications

Graduation projects supervision.

1. Home surveillance system over cellular network (2013).
2. RFID transceiver design (2013).
3. GSM-based remote controller design for quad-copter (2013).
4. Vehicle tracking using GSM system (2012).
5. Low cost design of the pair gain multiplexing system for wireline communication networks (2012).
6. BER simulations for the uplink and downlink CDMA using Simulink (2011).
7. Speech Enhancement using Adaptive Filter (2000-2001)
8. Image Compression using DCT (2002-2003)
9. Isolated Word Speech Recognition for hands free mobile communication (2004-2005).

Assisted in teaching the following undergraduate courses at Assiut University, Egypt:

1. Introduction to computer.
2. Electric Circuits and Electronics I.
3. Electronics II.
4. Network synthesis,
5. DSP using MATLAB
6. Electronic Circuits.

Assisted in teaching labs for undergraduate courses at Assiut University, Egypt:

1. Electric circuits Lab.
2. Electronics Lab.
3. Communications Lab.
4. Digital circuits Lab.

Computer and Programming skills:

1. MATLAB
2. C
3. FORTRAN
4. Assembly
5. R

Awards and grants:

1. Research assistantship from Iowa State University Spring 2008 until now.
2. Egyptian Government Scholarship to Study Ph.D. in the United States 2006-2010.
3. Travel grants from Milcom to attend the 2008 and 2010 conferences.
4. Travel grants from electrical engineering department, graduate college, and GBSS at Iowa State University to attend EIT 2008, Milcom 2008, and Milcom 2010 conferences.
5. Scholarship from Assiut University to study M.Sc. 2000-2004.
6. Mobinil Company Research Grant 2002.
7. Egyptian Syndicate of Engineers award (one of the best two students during the B.Sc.).
8. 6th October University honoring (The best student in the class 2nd year).

Activities:

1. Preparation of the curriculum for both graduate and undergraduate programs.
2. TPC member of IEEE Globecom 2013
3. TPC member of IEEE ICCVE 2013
4. Reviewer of IEEE Communications related publications in journals and conferences such as IEEE transactions on communications, IEEE transactions on wireless communications, IEEE Comm. Letter, IEEE INFOCOM conference, and IEEE military communication conference.

Membership:

1. IEEE
2. Egyptian Syndicate of Engineers
3. The Engineering Studies and Consultation Center in Assiut, Egypt.

Consultancy:

1. Surveillance system for Assiut stadium.
2. Fire alarm system for Sohag educational hospital.
3. Two-way radio system for security people in Assiut University.
4. Approving Egyptian telecommunication companies' Base Stations.

Conferences Attendance:

1. IEEE wireless days, Valencia, Spain, November, 2013. (To attend)
2. S2ERC 2011, Johnston, IA, USA
3. IEEE Milcom 2010 in San Jose, CA, USA
4. IEEE EIT 2008 Ames, IA, USA
5. IEEE Milcom 2008 in San Diego, CA, USA

Referees:

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