Mohamed Elsayed

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Education

MSc in Electrical Engineering, Assiut University, Egypt, 2015-2018.

Thesis Title: Spectral and Power Efficient Modulation Techniques for Wireless Communication Systems.

Brief MSc Research Synopsis:

The rapid advancement and the ubiquitous penetration of the internet of things (IoT) devices intensifies the research efforts to fulfill the escalating demand for spectral and energy efficient wireless communication systems. As such, my research focuses on proposing spectral and power efficient modulation techniques to be beneficially used in designing the physical (PHY) layer associated with the IoT devices. Therefore, three power and spectral efficient modulation schemes were proposed. Furthermore, detailed mathematical frameworks for assessing the performance of the proposed schemes based upon various system metrics were delineated. In addition, comprehensive simulations were utilized to corroborate the effectiveness of the analytical analysis conducted for all the considered schemes.

BSc in Electrical Engineering, University of Sohag, Egypt, 2010-2014 [GPA 3.33/4].

Employment

Teaching Assistant at the Electronics and Communication Department, Sohag University, 2014-2018.

As a T.A, I have assisted in teaching the following courses:

- Electrical Circuits I.
- Electrical Circuits II.
- Electrical Tests.
- Analog Communication.
- Digital Communication.
- Information Theory and Coding.
- Embedded Systems and Microcontrollers.

Skills

Software Skills:

- MATLAB.
- Simulink.
- Multisim.
- Proteus.
- C.
- C++.

Teaching Skills:

- Undergraduate demonstrator since 2014.
- Postgraduate demonstrator since 2017.
- Supervised four graduation projects.
- Led and supervised many seminars for undergraduate students.
- Now I hold a teaching assistant position at Sohag University.

Language Skills:

- English speaker and presenter (Very good).
- Arabic (Native language).
- Some knowledge of French.

Conferences Attended

- The International IEEE Asia Pacific Microwave Conference (APMC), Kuala-Lumpur, Malaysia, 2017.
- The 35th National Radio Science Conference (NRSC), Cairo, Egypt, 2018.
- International Japan-Africa Conference on Electronics, Communications and Computations, Alex, Egypt, 2018.

Publications

- M. Elsayed, H. S. Hussein, and U. S. Mohamed, "Higher Order Modulation Scheme for the 1-bit ADC MIMO-Constant Envelope Modulation," *IEEE Asia Pacific Microwave Conference (APMC)*, pp. 894-898, 2017.
- M. Elsayed, H. S. Hussein, and U. S. Mohamed, "Fully Generalised Spatial Modulation," *35th National Radio Science Conference (NRSC)*, pp. 274-282, 2018.
- H. S. Hussein and M. Elsayed, "Fully-Quadrature Spatial Modulation," *IEEE International Black Sea Conference on Communications and Networking (BlackSeaCom)*, pp. 1-5, 2018.
- H. S. Hussein, M. Elsayed, and U. S. Mohamed, "Fully-Quadrature Spatial Modulation over Rician Fading Channels," *Japan-Africa Conference on Electronics, Communications and Computers (JAC-ECC)*, 2018.
- H. Hussein, M. Elsayed, M. Fakhry, and U. Sayed Mohamed, "Energy and Spectrally Efficient Modulation Scheme for IoT Applications," *Sensors*, vol. 18, p. 4382, 2018.
- H. S. Hussein, M. Elsayed, U. S. Mohamed, H. Esmaiel, and E. M. Mohamed, "Spectral Efficient Spatial Modulation Techniques," *IEEE Access*, vol. 7, pp. 1454-1469, 2019.

Awards

- Best Paper Award in “35th National Radio Science Conference (NRSC)”, March, 2018.

Personal Interests

I enjoy engineering team competition like Robocon and IEEE Mine Sweepers, I participated at three different competitions when I was an undergraduate and supervised two teams as a T.A. I love the team spirit that emerges when team members cooperate to achieve their goal. I like to play football, group swimming, and group diving.

Research Interests

- Digital Signal Processing.
- Multiple-input multiple-output (MIMO) Systems.
- Low power Wireless Communication Systems.
- Wireless networks.
- Index Modulation.
- Spatial Modulation.
- OFDM and Cooperative communications.

References

- Prof. Usama Sayed Mohamed (MSc Supervisor)
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  University of Assiut.
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- Associate Prof. Ehab Mahmoud Mohamed
  Department of Electronics and Communication,
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- Dr. Hany S. Hussein
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