Magdy A. Abdelhay

Updated: October 28, 2024.

Basic Information

E-mail:	m@magdy.me magdi.abdelhai@gmail.com	Age:	37
		Nationality:	Egyptian
Phone:	+201114374441	Place of residence:	Giza, Egypt

Research Interests

Antenna arrays; signal processing; wireless communications; compressive sensing; machine learning; optimization.

Education

2015 - 2021 | **Ph.D. in Electrical Engineering**
University of Alexandria, Alexandria, Egypt
Thesis: *The Design of Thinned and Partially Adaptive Antenna Arrays Using Compressive Sensing and Optimization Techniques.*
Advisors: P*rof. Said E. El-Khamy and Prof. Noha O. Korany.*

2009 - 2013 | **M.Sc. in Electrical Engineering**
University of Alexandria, Alexandria, Egypt
Thesis: *Channel Estimation Techniques for Single and Multiple Transmit Antenna Orthogonal Frequency Division Multiplexing (OFDM) Systems.*
Advisors: *Prof. El-Sayed A. El-Badawy and Prof. Shawki E. Shaaban.*

2003 - 2008 | **B.Sc. in Electronics and Communications Engineering**
Alexandria Higher Institute of Engineering and Technology, Alexandria, Egypt

Papers Under Review

1. **M. A. Abdelhay**, "A Convex Optimization-Based Approach for Sidelobe Level Suppression and Null Control in Linear Arrays by Position-Only Control," submitted to *Wireless Personal Communications*.

Peer-Reviewed Journal Publications

1. **M. A. Abdelhay** and S. E. El-Khamy, "A compressed sensing-based approach for null steering in partially adaptive planar arrays using a reduced number of adjustable array elements," in *Digital Signal Processing*, vol. 145, p. 104311, 2024, doi: 10.1016/j.dsp.2023.104311.

2. **M. A. Abdelhay**, N. O. Korany and S. E. El-Khamy, "Synthesis of Uniformly Weighted Sparse Concentric Ring Arrays Based on Off-Grid Compressive Sensing Framework," in

IEEE Antennas and Wireless Propagation Letters, vol. 20, no. 4, pp. 448-452, April 2021, doi: 10.1109/LAWP.2021.3052174.

3. S. E. El-Khamy, N. O. Korany and **M. A. Abdelhay**, "Minimising number of perturbed elements in linear and planar adaptive arrays with broad nulls using compressed sensing approach," in *IET Microwaves, Antennas & Propagation*, vol. 13, no. 8, pp. 1134-1141, 2019, doi: 10.1049/iet-map.2018.5221.

Refereed Conference Proceedings

1. **M. A. Abdelhay** and S. E. El-Khamy, "A Hybrid Algorithm for the Synthesis of Sparse Concentric Ring Arrays," *2024 41st National Radio Science Conference (NRSC)*, New Damietta, Egypt, 2024, pp. 66-73, doi: 10.1109/NRSC61581.2024.10510470.

2. S. E. El-khamy, N. O. Korany and **M. A. Abdelhay**, "A Group-Sparse Compressed Sensing Approach for Thinning Multi-Carrier Frequency Diverse Arrays," *2019 URSI International Symposium on Electromagnetic Theory (EMTS)*, San Diego, CA, USA, 2019, pp. 1-4, doi: 10.23919/URSI-EMTS.2019.8931503.

3. **M. A. Abdelhay** and S. E. El-Khamy, "A new compressed sensing based approach for null steering of linear arrays by perturbing minimum number of elements," *2017 XXXIInd General Assembly and Scientific Symposium of the International Union of Radio Science (URSI GASS)*, Montreal, QC, 2017, pp. 1-4, doi: 10.23919/URSIGASS.2017.8105159.

4. S. E. El-Khamy and **M. A. Abdelhay**, "Reconfigurable sparse concentric ring arrays with optimized number of rings and elements," *2017 Progress In Electromagnetics Research Symposium - Spring (PIERS), St. Petersburg*, 2017, pp. 1254-1259, doi: 10.1109/PIERS.2017.8261941.

5. S. E. El-Khamy and **M. A. Abdelhay**, "Super thinned concentric ring arrays using iterative L1 optimization," *2017 34th National Radio Science Conference (NRSC)*, Alexandria, 2017, pp. 56-63, doi: 10.1109/NRSC.2017.7893477.

Academic Employment

2024-PRESENT

Lecturer
Department of Computer Engineering Technology,
College of Engineering Technical, Al-Ayen Iraqi University (AUIQ), Thi-Qar, Iraq.
Courses taught:

- Mobile Communication Systems
- Computer Networks Fundamentals
- English

2024 | **Lecturer**
Department of Electronics and Communications Engineering,
The International Academy for Engineering and Media Sciences, Giza, Egypt.
Courses taught:
- Antenna & Wave Propagation
- Information & Coding Theory
- Mobile Communications

2023 - 2024 | **Lecturer**
Department of Communications and Electronics Engineering,
Giza Higher Institute of Engineering and Technology, Giza, Egypt.
Courses taught:
- Microwave engineering
- Field theory
- Telephone circuits and switches

2022 - 2023 | **Lecturer**
Department of Electronics and Communications Engineering,
Pyramids Higher Institute for Engineering and Technology, Giza, Egypt.
Courses taught:
- Microwave theory
- Signal analysis
- Digital signal processing
- Radar systems
- Analog communications
- Electrical circuits (1)
- Electronics (1)
- Electronics (2)
- Electronic circuits design and simulation

2021 - 2022 | **Lecturer**
Department of Electronics and Communications Engineering,
Alexandria Higher Institute of Engineering & Technology, Alexandria, Egypt.
Courses taught:
- Signal processing
- Introduction to statistics
- Digital control

2013 - 2021 | **Assistant Lecturer**
Department of Electronics and Communications Engineering,
Alexandria Higher Institute of Engineering & Technology, Alexandria, Egypt.
Courses taught:

- Digital communications
- Analog communications
- Communication systems
- Introduction to microprocessors
- Microprocessor interfacing

2009 - 2013 | **Teaching Assistant**
Department of Electronics and Communications Engineering,
Alexandria Higher Institute of Engineering & Technology, Alexandria, Egypt.
Courses taught:

- Digital integrated circuits
- Analog integrated circuits
- Electronic circuits
- Electric circuits
- Introduction to microprocessors

Conference Presentations

2024, APRIL | "A Hybrid Algorithm for the Synthesis of Sparse Concentric Ring Arrays," with S. E. El-Khamy, *2024 41st National Radio Science Conference (NRSC)*, New Damietta, Egypt.

2017, MAY | "Reconfigurable Sparse Concentric Ring Arrays with Optimized Number of Rings and Elements," with S. E. El-Khamy, *38th Progress in Electromagnetics Research Symposium (PIERS)*, St Petersburg, Russia.

2017, MARCH | "Super Thinned Concentric Ring Arrays Using Iterative L1 Optimization," with S. E. El-Khamy, *34th National Radio Science Conference (NRSC)*, Alexandria, Egypt.

References

1. **Prof. Said El-Khamy**
   E-mail: elkhamy@ieee.org
   Phone: +201001497360
2. **Prof. Noha Korany**
   E-mail: nokorany@hotmail.com
   Phone: +201221387244