Electronics and Communications Engineering Department
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Personal Information

$\diamond$ **Date of Birth:** August 28, 1979

$\diamond$ **Occupation:** Professor, Electronics and Communications Engineering Department, American University in Cairo (AUC)

$\diamond$ **Nationality:** Egyptian

Education

$\diamond$ **University of Maryland**, College Park, MD
Ph.D. in Electrical and Computer Engineering, Spring 2008 (GPA = 4.0/4.0)
Thesis title: "Diversity in Cooperative Networks: How to Achieve and Where to Exploit?"
Advisor: Prof. K. J. Ray Liu.

$\diamond$ **University of Maryland**, College Park, MD
M.Sc. in Electrical Engineering, Fall 2007 (GPA= 4.0/4.0)

$\diamond$ **Alexandria University**, Egypt
M.Sc. in Electrical Engineering, April 2004 (GPA= 4.0/4.0)
Thesis title: "Blind Channel Estimation in OFDM systems"

$\diamond$ **Alexandria University**, Egypt
B.Sc. in Electrical Engineering, June 2001
Cumulative Grade "Distinction with Degree of Honor (94.27%)".
Department Rank: First on a class of 267 students
Graduation Project: "Personal Communications"

Honors

$\diamond$ **The IEEE Communications Society Best Tutorial Paper Award**, 2025

$\diamond$ **Faculty Merit Award for Excellence in Research and Creative Endeavors**, The American University in Cairo, 2021

$\diamond$ **IEEE TCGCC 2019 Best Conference Paper Award**, IEEE Communications Society (comsoc) Technical Committee on Green Communications and Computing (TCGCC), 2019

$\diamond$ **Presidential Medal of Excellence of the First Grade**, 2017

$\diamond$ **State Encouragement Award**, 2016

$\diamond$ **IEEE Senior Member**, 2014

$\diamond$ Included in **Who's Who** in World, 2010 Edition

$\diamond$ **Member of The Honor Society of Phi Kappa Phi**

$\diamond$ On the final list of top 5 students nominated for the Distinguished Dissertation Fellowship, University of Maryland 2008

$\diamond$ **Future Faculty Program (FFP) Fellowship**, University of Maryland 2007-2008

- ⋄ **University of Maryland Graduate School Super Fellowship**, 2004-2006
- ⋄ Certificate of Honor from the Egyptian President in 2002 for being ranked First among all departments in College of Engineering, Alexandria University
- ⋄ Distinction with Honors at B.Sc. degree, and ranked First on a class of 267 students, Alexandria University 2001
- ⋄ Certificate of Merit, First Class Honors, for being one of the top ten students in the electrical engineering department during my undergraduate study, Alexandria University, Egypt 1997-2001

Other Honors

- ⋄ **Mohamed T. Ismail won the AUC Medhat Haroun Award for Scholarly Excellence** for his master's thesis work, recognized as the outstanding thesis work in an engineering-related discipline for theses completed during the calendar year 2022. **I co-advised Mohamed thesis work with Dr. Hossam Sharara**, 2023
- ⋄ **Mohamed Nomeir won the AUC Medhat Haroun Award for Scholarly Excellence** for his master's thesis work, recognized as the outstanding thesis work in an engineering-related discipline for theses completed during the calendar year 2021. **I co-advised Mohamed thesis work with Dr. Yasser Gadallah**, 2022

Research Interests

- ⋄ **Current Research Interests**
  - Applications of machine learning in communications and networks
  - Reconfigurable Intelligent Surfaces (RIS)
  - Massive MIMO/Cell-Free Massive MIMO
  - Age of Information
  - Back-scattered Communications

- ⋄ **Old Research Interests**
  - Layered Channel Coding
    * Coherent and non-coherent layered channel coding
    * Relay-assisted layered channel coding
  - Cognitive Radio Networks
    * Throughput maximization
    * Secondary users access schemes
    * Cognitive relaying
  - Sensor Networks
    * Distributed detection in wireless sensor networks
    * Censoring in wireless sensor networks
  - Smart Grid Communications
    * Joint detection-estimation
    * Unequal error protection over PLCs
  - Interference Alignment
    * Linear interference alignment
  - Interference Channels
    * DMT for the Z-interference channel
    * DMT for ARQ over the Z-interference channel

- – Cooperative Communications
  - ∗ Design of distributed space-time codes (DSTC)
  - ∗ Design of distributed space-frequency codes (DSFC)
- – Source and Channel Diversity over Relay Channels
  - ∗ Distortion exponent for source and channel diversities achieving schemes
  - ∗ Selecting the optimum number of relays for cooperation
  - ∗ Optimal rate allocation between source and channel encoders
- – Blind Channel Estimation in OFDM and MIMO-OFDM Systems
  - ∗ Subspace decomposition based algorithms
  - ∗ Finite alphabet based algorithms

Grants

⋄ **Egypt-China Cooperation Program**, Co-PI
Project Title: Research on Key Technologies of High Reliability Enhancement for 6G Wireless Network
July 2025 - June 2027

⋄ **Purdue University**, PI
Project Title: Basic Research in Communication Systems and Sensors
Fund Amount: 386,200 USD
Duration: November 2022 - September 2028

⋄ **The American University in Cairo: AUC Climate Change Initiative**, Co-PI
Project Title: An integrated analysis of green modes of mobility in new urban communities
May 2022

⋄ **German-Egyptian progress partnership; short-term measures**, Co-PI
Project Title: Intelligent Industrial Internet-of-Things (I3oT)
September 2021 - December 2021

⋄ **The American University in Cairo: The Bartlett Family Grant**, Co-PI
Project Title: Surviving Cancer to Die of Heart Disease? Predicting when Stopping this Killer Disease will Stop Hearts
Feb. 2020 - Jan. 2023

⋄ **German-Egyptian progress partnership; short-term measures**, Co-PI
Project Title: Improving the Transformation to Reliable Wireless Communication or the Internet of Things
September 2019 - December 2019

⋄ **The American University in Cairo: The Bartlett Family Grant**
Project Title: Short Visit to Princeton University
April 2019

⋄ **The American University in Cairo**, PI
Project Title: Machine Learning-Based LTE Network Optimization and Capacity Forecasting and Planning
Fund Amount: 510,240 EGP
Duration: two years, July 2018 - June 2020

⋄ **The Swedish Foundation for International Cooperation in Research and Higher Education (STINT)**, Co-PI
Project Title: Collaboration between Sweden and Egypt to improve reliability and security for Internet of Things technology and its applications
Fund Amount: 17,000 USD
Duration: April 2018 - February 2019

◇ **National Telecommunications Regulatory Agency (NTRA)**, Co-PI
Project Title: CRC: Collaborative Research and Teaching Testbed for Wireless Communications and Networks-Phase II
Fund Amount: 2,901,400 EGP
Duration: August 2017 - April 2019

◇ **National Telecommunications Regulatory Agency (NTRA)**, Consultant
Project Title: Cognitive Radio Cloud (CRC): Enabling a Collaborative Environment for Wireless Communication and Networking Research

◇ **Qatar National Research Fund (QNRF)**, Co-PI
Project Title: A New Layered Transmission Approach for Next Generation Communication Networks
Fund Amount: 1,014,107 USD
Duration: Jan. 2013 - Dec. 2015

◇ **Intel Labs University Research Office (URO)**, Co-PI
Project Title: Reliable low-power wireless communication architectures for smart grid and factory automation applications
Fund Amount: 40,000 USD
Duration: Sept. 2012 - May 2014

◇ AUC Internal Grants

- Conference Travel Grant: WCNC 2012, WCNC 2014, DySPAN 2014, Globecom 2014, Globecom 2015, WCNC 2016, ISIT 2016, ICC 2017, Globecom 2018, CCNC 2020
- Teaching Enhancement Grant to attend the ABET Accreditation Workshop, 2013

Publications

◇ **Books**

- **K. G. Seddik**, Diversity in Cooperative Networks: How to Achieve and Where to Exploit?, VDM-Verlag, 2008 (my Ph.D. Thesis)

◇ **Book Chapters**

- A. Elzanati, M. Abdelkader, and **K. G. Seddik**, "A Collaborative Approach for Compressive Spectrum Sensing", in "Software-Defined and Cognitive Radio Technologies for Dynamic Spectrum Access and Management", IGI Global, 2014

◇ **Journal Papers**

1. M. AlaaEldin, M. Al-Jarrah, X. Mu, E. Alsusa, **K. G. Seddik**, and M. Matthaiou, "RIS-enabled Multi-user M-QAM Uplink NOMA Systems: Design, Analysis, and Optimization", accepted for publication in *IEEE Transactions on Communications*, Jan. 2026

2. A. AlAlwani, K. Banawan, **K. G. Seddik**, and M. Karmoose, "Scalable User Association with Least-Conflict Pilot Assignment in Cell-Free Massive MIMO", accepted in publication in *IEEE Wireless Communications Letters*, 2026

3. A. Elbakary, C. Ben Issaid, T. ElBatt, **K. G. Seddik**, and M. Bennis, "MIRA: A Method of Federated MultI-Task Learning for LaRge LAnguage Models", *IEEE Networking Letters*, vol. 7, no. 3, pp. 171–175, Sept. 2025

4. A. Abdelraheem, D. Peroulis, D. Eroglu, and **K. G. Seddik** , "Multipolar On-Resonance Interference for Super-Gain Electrically Small Dielectric Resonator Antenna (ESDRA) Design", *IEEE Open Journal of Antennas and Propagation*, vol. 6, no. 4, pp. 1135–1155, Aug. 2025

5. M. Hagag, T. Jones, **K. G. Seddik**, and D. Peroulis, "Nonreciprocal Signal Growth in Space-Time Modulated Transmission Lines", *Scientific Reports*, 15, (1899) 2025

6. M. Alaa ElDin, E. Alsusa, M. Al-jarrah, **K. G. Seddik**, and M. Matthaiou, "Generalized BER Performance Analysis for SIC-based Uplink NOMA", *IEEE Open Journal of the Communications Society*, vol. 6, pp. 1246–1265, 2025

7. M. Hagag, T. Jones, **K. G. Seddik**, and D. Peroulis, "Signal Growth in a Pure Time-Modulated Transmission Line and the Loss Effect", *Royal Society Open Science*, vol. 11, no. 11, Nov. 2024

8. M. Alaa ElDin, E. Alsusa, **K. G. Seddik**, M. Al-jarrah, and C. Papadias, "Optimization of Energy-Constrained IRS-NOMA Using a Complex Circle Manifold Approach", *IEEE Internet of Things Journal*, vol. 11, no. 20, pp. 33133–33150, Oct. 2024

9. B. Gabr, A. H. Sakr, H. ElSawy, **K. G. Seddik**, and W. Mesbah, "Hybrid k-preemptive Transmission Scheme for Minimal Age of Information in IoT Networks", *IEEE Wireless Communications Letters*, vol. 13, no. 9, pp. 2342–2346, Sept. 2024

10. M. A. ElMossallamy, M. Pan, R. Jäntti, **K. G. Seddik**, G. Y. Li, and Z. Han, "Noncoherent Frequency Shift Keying for Ambient Backscatter over OFDM Signals ", *IEEE Open Journal of the Communications Society*, vol. 5, pp. 5219–5231, 2024

11. B. Salama, A. Elgharably, M. Aboelwafa, G. Alsuhli, K. Banawan, and **K. G. Seddik**, "Self-Optimized Agent for Load Balancing and Energy Efficiency: A Reinforcement Learning Framework with Hybrid Action Space", *IEEE Open Journal of the Communications Society*, vol. 5, pp. 4902–4919, 2024

12. M. M. El-Husseiny, I. Mashaly, N. Azouz, N. Sakr, **K. G. Seddik**, and S. Atallah, "Exploring sustainable urban mobility in Africa/MENA universities towards intersectional future research", *Transportation Research Interdisciplinary Perspectives, Elsevier*, vol. 26, July 2024

13. K. Banawan, A. Arafa, and **K. G. Seddik**, "Multi-Process Estimation Over Erasure Channels With and Without Feedback", *IEEE Journal on Selected Areas in Information Theory*, vol. 4, pp. 607–623, Nov. 2023

14. G. Alsuhli, K. A. Banawan, K. M. Attiah, A. Elezabi, **K. G. Seddik**, A. Gaber, M. Zaki, and Y. Gadallah, "Mobility Load Management in Cellular Networks: A Deep Reinforcement Learning Approach", *IEEE Transactions on Mobile Computing*, vol. 22, no. 3, pp. 1581–1598, March 2023

15. M. Nomeir, Y. Gadallah, and **K. G. Seddik**, "Machine Learning-Based Uplink Scheduling Approaches for Mixed Traffic in Cellular Systems", *IEEE Access*, vol. 11, pp. 10238–10253, Jan. 2023

16. M. Alaa ElDin, E. Alsusa, and **K. G. Seddik**, "IRS-Assisted Physical Layer Network Coding over Two-Way Relay Fading Channels", *IEEE Transactions On Vehicular Technology*, vol. 71, no. 8, pp. 8424–8440, August 2022

17. **K. G. Seddik**, "On the Degrees of Freedom of IRS-Assisted Non-coherent MIMO Communications", *IEEE Communications Letters*, vol. 26, no. 5, pp. 1175–1179, May 2022

18. M. ElMossallamy, R. Sultan, **K. G. Seddik**, G. Y. Li, and Z. Han, "Maximizing Dirty-Paper Coding Rate of RIS-assisted Multi-User MIMO Broadcast Channels", *Intelligent and Converged Networks*, vol. 3, no. 1, pp. 64–73, March 2022

19. M. Alaa ElDin, E. Alsusa, **K. G. Seddik**, and W. Mesbah, "AoD-Adaptive Channel Feedback for FDD Massive MIMO Systems with Multiple-Antenna Users", *IEEE Access*, vol. 10, pp. 4431–4447, Jan. 2022

20. A. Arafa, K. Banawan, **K. G. Seddik**, and H. V. Poor, "Sample, Quantize and Encode: Timely Estimation Over Noisy Channels", *IEEE Transactions On Communications*, vol. 69, no. 10, pp. 6485–6499, Oct. 2021

21. R. Sultan, **K. G. Seddik**, Z. Han, and B. Aazhang, "Joint Transmitter-Receiver Optimization and Self-interference Suppression in Full-Duplex MIMO Systems", *IEEE Transactions On Vehicular Technology*, vol. 70, no. 7, pp. 6913–6929, July 2021

22. M. ElMossallamy, **K. G. Seddik**, W. Chen, L. Wang, G. Y. Li, and Z. Han, "RIS Optimization on the Complex Circle Manifold for Interference Mitigation in Interference Channels", *IEEE Transactions On Vehicular Technology*, vol. 70, no. 6, pp. 6184–6189, June 2021

23. M. ElMossallamy, H. Zhang, R. Sultan, **K. G. Seddik**, L. Song, G. Y. Li, and Z. Han, "On Spatial Multiplexing Using Reconfigurable Intelligent Surfaces", *IEEE Wireless Communications Letters*, vol. 10, no. 2, pp. 226–230, Feb. 2021

24. K. M. Attiah, **K. G. Seddik**, and R. Gohary, "Differential Unitary Space-Time Constellations from Spherical Codes", *IEEE Wireless Communications Letters*, vol. 9, no. 11. pp. 1909–1913, Nov. 2020

25. M. Aboelwafa, **K. G. Seddik**, M. Eldefrawy, Y. Gadallah and M. Gidlund, "A Machine Learning-Based Technique for False Data Injection Attacks Detection in Industrial IoT", *IEEE Internet of Things Journal*, vol. 7, no. 9, pp. 8462–8471, Sept. 2020

26. M. A. ElMossallamy, H. Zhang, L. Song, **K. G. Seddik**, Z. Han and G. Y. Li, "Reconfigurable Intelligent Surfaces for Wireless Communications: Principles, Challenges, and Opportunities", *IEEE Transactions on Cognitive Communications and Networking*, vol. 6, no. 3, pp. 990–1002, Sept. 2020

27. S. Attalla, **K. G. Seddik**, A. El-Sherif and S. Rabia, "Hybrid ARQ-CQI Feedback-Based Access Scheme in Cognitive Radio Networks", *IEEE Transactions on Cognitive Communications and Networking*, vol. 6, no. 2, pp. 728–739, June 2020

28. R. Sultan, L. Song, **K. G. Seddik**, and Z. Han, "Joint Resource Management with Distributed Uplink Power Control in Full-Duplex OFDMA Networks", *IEEE Transactions on Vehicular Technology*, vol. 69, no. 3, pp. 2850–2863, March 2020

29. A. Gaber, E. Youssef, M. R. M. Rizk, M. Salman, **K. G. Seddik**, "Cooperative Delay-Constrained Cognitive Radio Networks: Delay-Throughput Trade-off with Relaying Full-Duplex Capability", *IEEE Access*, vol. 8, pp. 9157–9171, Jan. 2020

30. M. Elwekeil, M. Abdalzaher, **K. G. Seddik**, "Prolonging Smart Grid Network Lifetime through Optimizing Number of Sensor Nodes and Packet Length", *IET Communications*, vol. 13, no. 16, pp. 2478–2484, Oct. 2019

31. M. Abdel-Malek, **K. G. Seddik**, T. ElBatt and Y. Mohasseb, "Effective Capacity Optimization for Cognitive Radio Networks Under Primary QoS Provisioning", *Wireless Networks, Springer*, April 2019

32. M. A. ElMossallamy, Z. Han, M. Pan, R. Jäntti, **K. G. Seddik** and G. Y. Li, "Noncoherent Backscatter Communications over Ambient OFDM Signals", *IEEE Transactions on Communications*, vol. 57, no. 5, pp. 3597–3611, May 2019

33. M. Awad, **K. G. Seddik**, and A. Elezabi, "Low-Complexity Semi-Blind Channel Estimation Algorithms for Vehicular Communications using the IEEE 802.11p Standard", *IEEE Transactions on Intelligent Transportation Systems*, vol. 20, no. 5, pp. 1739–1748, May 2019

34. M. Aboelwafa, M. Abd-Elmagid, A. Biason, **K. G. Seddik**, T. ElBatt and M. Zorzi, "Towards Optimal Resource Allocation in Wireless Powered Communication Networks with Non-Orthogonal Multiple Access", *Elsevier Ad Hoc Networks*, vol. 85, pp. 1–10, March 2019

35. M. A. ElMossallamy, **K. G. Seddik** and R. Gohary, "Multi-resolution Multicasting Using Grassmannian Codes and Space Shift Keying," *IEEE Transactions on Vehicular Technology*, vol. 68, no. 1, pp. 988–992, Jan. 2019

36. A. Guirguis, F. Digham, **K. G. Seddik**, M. Ibrahim, K. A. Harras, and M. Youssef, "Primary User-aware Optimal Discovery Routing for Cognitive Radio Networks", *IEEE Transactions on Mobile Computing*, vol. 18, no. 1, pp. 193–206, Jan. 2019

37. M. Abd-Elmagid, T. ElBatt, **K. G. Seddik**, and O. Ercetin, "Stable Throughput of Cooperative Cognitive Networks with Energy Harvesting: Finite Relay Buffer and Finite Battery Capacity", *IEEE Transactions on Cognitive Communications and Networking*, vol. 4, no. 4, pp. 704–718, Dec. 2018

38. S. Attalla, **K. G. Seddik**, A. El-Sherif and S. Rabia, "Soft-Sensing CQI Feedback-Based Access Scheme in Cognitive Radio Networks", *IEEE Transactions on Cognitive Communications and Networking*, vol. 4, no. 3, pp. 486–499, Sept. 2018

39. M. Abd-Elmagid, T. ElBatt and **K. G. Seddik**, "Optimization of Energy-Constrained Wireless Powered Communication Networks with Heterogeneous Nodes", *Wireless Networks, Springer*, Sept. 2017

40. **K. G. Seddik**, R. Gohary, M. T. Hussien, M. Shaqfeh, H. Alnuweiri and H. Yanikomeroglu, "Multi-Resolution Multicasting Over the Grassmann and Stiefel Manifolds", *IEEE Transactions on Wireless Communications*, vol. 16, no. 8, pp. 5296–5310, August 2017

41. A. M. Elmahdy, A. El-Keyi, Y. Mohasseb, T. ElBatt, M. Nafie, **K. G. Seddik**, and T. Khattab, "Degrees of Freedom of the Full-Duplex Asymmetric MIMO 3-Way Channel with Unicast and Broadcast Messages", *IEEE Transactions on Communications*, vol. 65, no. 8, pp. 3276–3287, August 2017

42. M. S. Abdalzaher, **K. G. Seddik** and O. Muta, "Using Stackelberg game to enhance cognitive radio sensor networks security", *IET Communications*, vol. 11, no. 9, pp. 1503–1511, June 2017

43. A. M. Elmahdy, A. El-Keyi, T. ElBatt and **K. G. Seddik**, "Optimizing Cooperative Cognitive Radio Networks Performance with Primary QoS Provisioning", *IEEE Transactions on Communications*, vol. 65, no. 4, pp. 1451–1463, April 2017

44. R. Sultan, L. Song, **K. G. Seddik**, and Z. Han, "Full-Duplex Meets Multiuser MIMO: Comparisons and Analysis", *IEEE Transactions on Vehicular Technology*, vol. 66, no. 1, pp. 455–467, Jan. 2017

45. A. Anwar, **K. G. Seddik**, T. ElBatt and A. Zahran, "Effective Capacity of Delay Constrained Cognitive Radio Links Exploiting Primary Feedback", *IEEE Transactions on Vehicular Technology*, vol. 65, no. 9, pp. 7334–7348, Sept. 2016

46. M. Salah, **K. G. Seddik**, M. Elsabrouty, O. Muta, H. Furukawa, A. Abdel-Rahman, "Game Theory MeetsWireless Sensor Networks Security Requirements and Threats Mitigation: A Survey", *Sensors*, vol. 16, no. 7, June 2016

47. Y. H. Ezzeldin and **K. G. Seddik**, "Pseudo-Lattice Treatment for Subspace Aligned Interference Signals", *IEEE Transactions on Vehicular Technology*, vol. 63, no. 9, pp. 4729–4734, Nov. 2014

48. A. Arafa, **K. G. Seddik**, A. K. Sultan, T. ElBatt and A. A. El-Sherif, "A Feedback- Soft Sensing-Based Access Scheme for Cognitive Radio Networks", *IEEE Transactions on Wireless Communications*, vol. 12, no. 7, pp. 3226–3237, July 2013

49. A. Y. Al-Nahari, **K. G. Seddik**, M. I. Dessouky, and F. E. Abd El-Samie, "Distributed Space-Frequency Coding for Cooperative Diversity over Broadband Relay Channels with DF Relaying", *IEEE Transactions on Vehicular Technology*, vol. 61, no. 7, pp. 3266–3272, Sept. 2012

50. **K. G. Seddik**, A. Kwasinski, and K. J. R. Liu, "Asymptotic Distortion Performance of Source-Channel Diversity over Multi-Hop and Relay Channels", *IEEE Transactions on Mobile Computing*, vol. 9, no. 2, pp. 270–287, Feb. 2010

51. A. S. Ibrahim, **K. G. Seddik**, and K. J. R. Liu, "Connectivity-Aware Network Maintenance and Repair via Relays Deployment", *IEEE Transactions on Wireless Communications*, vol. 8, no. 1, pp. 356–366, Jan. 2009

52. **K. G. Seddik** and K. J. R. Liu, "Distributed Space-Frequency Coding over Broadband Relay Channels", *IEEE Transactions on Wireless Communications*, vol. 7, no. 11, pp. 4748–4759, Nov. 2008

53. **K. G. Seddik**, A. K. Sadek, A. S. Ibrahim, and K. J. R. Liu, "Design Criteria and Performance Analysis for Distributed Space-Time Coding", *IEEE Transactions on Vehicular Technology*, vol. 57, no. 4, pp. 2280–2292, July 2008

54. **K. G. Seddik**, A. S. Ibrahim, and K. J. R. Liu, "Trans-Modulation in Wireless Relay Networks", *IEEE Communications Letters*, vol. 12, no. 3, pp. 170–172, March 2008

55. **K. G. Seddik**, A. K. Sadek, W. Su, and K. J. R. Liu, "Outage Analysis and Optimal Power Allocation for Multi-Node Relay Networks", *IEEE Signal Processing Letters*, vol. 14, no. 6, pp. 377–380, June 2007

◇ **Conference Papers**

56. F. Abouelghit and **K. G. Seddik**, "Genetic Algorithm-Based Placement and Resource Allocation For Flying Base Stations", IEEE Middle East Conference on Communications and Networking (IEEE MECOM), Cairo, Egypt, Nov. 2025

57. A. El Soukkary and **K. G. Seddik**, "Energy Efficient Load Balancing in Multiband Cellular Networks via Reinforcement Learning", IEEE 36th Annual International Symposium on Personal, Indoor and Mobile Radio Communications (PIMRC), Istanbul, Turkey, Sept. 2025

58. A. M AlAlwani, A. M. Itman, A. Gaber, M. Zaki, M. G. Khafagy, K. A. Banawan, and **K. G. Seddik**, "Traffic-Aware Base Station Sleep Threshold Design with User Throughput Guarantees", IEEE 11th International Conference on Network Softwarization (NetSoft), Budapest, Hungary, June 25

59. S. Abouamasha, M. Aboelwafa, and **K. G. Seddik**, "Load Balancing and Energy Efficiency in Cellular Networks With a Scenario-Aware Reinforcement Learning Agent", IEEE Communications and Networking Conference (WCNC), Milano, Italy, March 2025

60. A. Elgharably, M. Aboelwafa, K. Banawan, and **K. G. Seddik**, "Hierarchical Multi-Agent Reinforcement Learning Framework for Cellular Mobility Load Management", IEEE 22nd Consumer Communications & Networking Conference (CCNC 2025), Las Vegas, USA, Jan 25

61. M. Hagag, T. Jones, **K. G. Seddik**, and D. Peroulis, "Signal amplification in time-modulated RF components with infinite superluminality", the 2024 IEEE International Symposium on Antennas and Propagation and ITNC-USNC-URSI Radio Science Meeting (IEEE AP-S/URSI), Florence, Italy, July 2024

62. A. Abdelraheem, **K. G. Seddik**, and D. Peroulis, "Electrically Small Antenna Based on Low Order Mie-Resonances", the 2024 IEEE International Symposium on Antennas and Propagation and ITNC-USNC-URSI Radio Science Meeting (IEEE AP-S/URSI), Florence, Italy, July 2024

63. A. Elbakary, C. Ben Issaid, M. Shehab, **K. G. Seddik**, T. ElBatt, and M. Bennis, "Fed-Sophia: A Communication-Efficient Second-Order Federated Learning Algorithm", IEEE International Conference on Communications (ICC), Denver, USA, June 2024

64. M. Alaa ElDin, E. Alsusa, and **K. G. Seddik**, "Design of IRS-Assisted Non-Binary Channel-Coded Physical Layer Network Coding", IEEE 97th Vehicular Technology Conference: VTC2023-Spring, Florence, Italy, June 2023

65. M. Yonan, M. G. Khafagy, K. Banawan, and **K. G. Seddik**, "Joint Beamforming and Metasurface Reflection: A Lightweight Design for Energy Efficiency via Deep Reinforcement Learning", IEEE 97th Vehicular Technology Conference: VTC2023-Spring, Florence, Italy, June 2023

66. B. Gabr, H. ElSawy, **K. G. Seddik**, and W. Mesbah, "Age of Information for Preemptive/Non-preemptive Transmissions in Large-Scale IoT Networks", IEEE Global Communications Conference (Globecom), Rio de Janeiro, Brazil, Dec. 2022

67. K. A. Banawan, A. Arafa, and **K. G. Seddik**, "Timely Multi-Process Estimation with Erasures", the 56th Asilomar Conference on Signals, Systems and Computers, Pacific Grove, CA, Oct.-Nov. 2022

68. M. Alaa ElDin, E. Alsusa, **K. G. Seddik**, and M. Al-Jarrah, "Optimizing IRS-Assisted Uplink NOMA System for Power Constrained IoT Networks", VTC2022-Fall Recent Results and Workshops, Workshop on Towards Net-Zero Energy Communication Networks, London/Beijing, Sept. 2022

69. M. Ismail, H. Sharara, K. Madkour, and **K. G. Seddik**, "Autoencoder-Based Data Sampling for Machine Learning-Based Lithography Hotspot Detection", the 4th ACM/IEEE Workshop on Machine Learning for CAD (MLCAD), Snowbird, Utah, USA, Sept. 2022

70. M. N. Aboelwafa, G. Alsuhli, K. A. Banawan, and **K. G. Seddik**, "Self-Optimization of Cellular Networks Using Deep Reinforcement Learning with Hybrid Action Space", IEEE Consumer Communications & Networking Conference (CCNC), Las Vegas, USA, Jan. 2022

71. M. Nomeir, Y. Gadallah, and **K. G. Seddik**, "Uplink Scheduling for Mixed Grant-Based eMBB and Grant-Free URLLC Traffic in 5G Networks", the International Conference on Wireless and Mobile Computing, Networking and Communications (WiMob), Oct. 2021

72. M. Alaa ElDin, E. Alsusa, and **K. G. Seddik**, "Quantized vs. Analog Channel Feedback for FDD Massive MIMO Systems With Multiple-Antenna Users", IEEE 32nd Annual International Symposium on Personal, Indoor and Mobile Radio Communications (IEEE PIMRC), Helsinki, Finland, Sept. 2021

73. A. M. Elshal, B. Gabr, L. H. Afify, A. El-Sherif, **K. G. Seddik**, and M. Elattar, "Machine Learning-based Module for Monitoring LTE/WiFi Coexistence Networks Dynamics", IEEE ICC 2021 WS - the 3rd International Workshop on Data Driven Intelligence for Networks and Systems (WS22 ICC'21 Workshop - DDINS), Montreal, Canada, June 2021

74. G. Alsuhli, K. Banawan, **K. G. Seddik**, and A. Elezabi, "Optimized Power and Cell Individual Offset for Cellular Load Balancing via Reinforcement Learning", IEEE Wireless Communications and Networking Conference (WCNC), Nanjing, China, March 2021

75. G. Alsuhli, H. Ismail, K. Alansary, M. Rumman, M. Mohamed, and **K. G. Seddik**, "Deep Reinforcement Learning-based CIO and Energy Control for LTE Mobility Load Balancing", IEEE Consumer Communications & Networking Conference (CCNC), Las Vegas, USA, Jan. 2021

76. S. Attalla, **K. G. Seddik**, A. El-Sherif and T. ElBatt, "A Reinforcement Learning Approach to ARQ Feedback-based Multiple Access for Cognitive Radio Networks", IEEE Consumer Communications & Networking Conference (CCNC), Las Vegas, USA, Jan. 2021

77. E. El-Guindy, **K. G. Seddik**, A. El-Sherif and T. ElBatt, "Feedback-based Access Schemes in CR Networks: A Reinforcement Learning Approach", IEEE Consumer Communications & Networking Conference (CCNC), Las Vegas, USA, Jan. 2021

78. A. Arafa, K. A. Banawan, **K. G. Seddik** and H. V. Poor, "Timely Estimation Using Coded Quantized Samples", IEEE International Symposium on Information Theory (ISIT), Los Angles, CA, USA, June 2020

79. A. Kassab, **K. G. Seddik**, A. Elezabi, and A. Soltan, "Realistic Wireless Smart-Meter Network Optimization Using Composite RPL Metric", the International Smart Grid Conference (icSmartGrid), Paris, France, June 2020

80. K. M. Attiah, K. A. Banawan, A. Gaber, A. Elezabi, **K. G. Seddik**, Y. Gadallah, K. Abdullah, "Load Balancing in Cellular Networks: A Reinforcement Learning Approach", 17th Annual IEEE Consumer Communications & Networking Conference (CCNC), Las Vegas, USA, Jan. 2020

81. M. Aboelwafa, M. Zaki, A. Gaber, **K. G. Seddik**, Y. Gadallah, A. Elezabi, "Machine Learning-Based MIMO Enabling Techniques for Energy Optimization in Cellular Networks", 17th Annual IEEE Consumer Communications & Networking Conference (CCNC), Las Vegas, USA, Jan. 2020

82. K. Abdullah, S. Attalla, Y. Gadallah, A. Elezabi, **K. G. Seddik**, A. Gaber and D. Samak, "A Machine Learning-Based Technique for the Classification of Indoor/Outdoor Cellular Network Clients", 17th Annual IEEE Consumer Communications & Networking Conference (CCNC), Las Vegas, USA, Jan. 2020 [**poster**]

83. A. Arafa, K. A. Banawan, **K. G. Seddik** and H. V. Poor, "On Timely Channel Coding with Hybrid ARQ", IEEE Global Communications Conference (Globecom), Waikoloa, USA, Dec. 2019

84. M. A. ElMossallamy, Z. Han, M. Pan, R. Jäntti, **K. G. Seddik** and G. Y. Li, "Noncoherent MIMO Codes Construction using Autoencoders", IEEE Global Communications Conference (Globecom), Waikoloa, USA, Dec. 2019

85. A. Gaber, M. Salman, E. Youssef, M. R. M. Rizk, **K. G. Seddik**, "Cooperative Delay-Constrained Cognitive Radio Networks: Throughput Maximization With Full-Duplex Capability Impact", the 14th International Conference on Cognitive Radio Oriented Wireless Networks (Crowncom), Poznan, Poland, June 2019

86. M. A. ElMossallamy, Z. Han, M. Pan, R. Jäntti, **K. G. Seddik** and G. Y. Li, "Noncoherent Frequency Shift Keying for Ambient Backscatter over OFDM Signals", IEEE International Conference on Communications (ICC), Shanghai, China, May 2019 [**IEEE TCGCC 2019 Best Conference Paper Award**]

87. M. A. ElMossallamy, Z. Han, M. Pan, R. Jäntti, **K. G. Seddik** and G. Y. Li, "Backscatter Communications over Ambient OFDM Signals using Null Subcarriers", IEEE Global Communications Conference (Globecom), Abu Dhabi, United Arab Emirates, Dec. 2018

88. M. Alaa Eldin, **K. G. Seddik** and W. Mesbah, "AoD-Adaptive Channel Feedback in FDD Massive MIMO Systems with Multiple-Antenna Users", IEEE Global Communications Conference (Globecom), Abu Dhabi, United Arab Emirates, Dec. 2018

89. R. Sultan, **K. G. Seddik**, Z. Han, and B. Aazhang, "Asymptotic Behavior Analysis and Performance Optimization in Full Duplex Massive MIMO", IEEE Global Communications Conference (Globecom), Singapore, Singapore, Dec. 2017

90. S. Attalla, **K. G. Seddik**, A. El-Sherif and S. Rabia, "Hybrid Feedback-Based Access Scheme for Cognitive Radio Systems", IEEE Global Communications Conference (Globecom), Singapore, Singapore, Dec. 2017

91. R. Sultan, **K. G. Seddik**, and Z. Han, "Crystallized Rate Regions for Full Duplex Enabled Small Cell Networks", IEEE Global Communications Conference (Globecom), Singapore, Singapore, Dec. 2017

92. M. Aboelwafa, **K. G. Seddik** and M. ElNainay, "Cooperation in Multi-User Wireless Powered Communication Networks", IEEE International Conference on Wireless and Mobile Computing, Networking and Communications (WiMob), Rome, Italy, Oct. 2017

93. R. Gohary, K. M. Attiah and **K. G. Seddik**, "Hierarchical Coherent and Noncoherent Communication", the 51st Asilomar Conference on Signals, Systems and Computers, Pacific Grove, CA, Nov. 2017

94. M. El Hosainy, **K. G. Seddik** and A. Elezabi, "Fault-Tolerant PMU Placement using Algebraic Connectivity of Graphs", the 7th IEEE International Conference on Innovative Smart Grid Technologies (IEEE PES ISGT Europe), Torino, Italy, Sep. 2017

95. M. S. Abdalzaher, **K. G. Seddik** and O. Muta, "An Effective Stackelberg Game for High-Assurance of Data Trustworthiness in WSNs", IEEE Symposium on Computers and Communication (ISCC 2017), Heraklion, Greece, July 2017

96. M. S. Abdalzaher, **K. G. Seddik** and O. Muta, "Using Repeated Game for Maximizing High Priority Data Trustworthiness in Wireless Sensor Networks", IEEE Symposium on Computers and Communication (ISCC 2017), Heraklion, Greece, July 2017

97. M. S. Mohamed, **K. G. Seddik**, M. Nafie and A. El-Keyi, "Cooperative D2D Communication in Downlink Cellular Networks with Energy Harvesting Capability", the International Wireless Communications and Mobile Computing Conference (IWCMC), Valencia, Spain, June 2017

98. K. M. Attiah, **K. G. Seddik**, R. Gohary, and H. Yanikomeroglu, "Non-coherent Multi-layer Constellations for Unequal Error Protection", IEEE International Conference on Communications (ICC), Paris, France, May 2017

99. M. Abd-Elmagid, A. Biason, T. ElBatt, **K. G. Seddik** and Michele Zorzi, "Non-Orthogonal Multiple Access Schemes in Wireless Powered Communication Networks", IEEE International Conference on Communications (ICC), Paris, France, May 2017

100. K. M. Metwaly, **K. G. Seddik** and M. ElNainay, "A Cooperative Scheme for the Coexistence of the LTE and WiFi systems", IEEE Wireless Communications and Networking Conference (WCNC), San Francisco, USA, March 2017

101. M. Abd-Elmagid, T. ElBatt and **K. G. Seddik**,"On the Role of Finite Queues in Cooperative Cognitive Radio Networks with Energy Harvesting", International Conference on Computing, Networking and Communications: Cognitive Computing and Networking (ICNC'17 COG), Silicon Valley, USA, Feb. 2017

102. R. Sultan, L. Song, **K. G. Seddik** and Z. Han, "Full Duplex in Massive MIMO Systems: Analysis and Feasibility", IEEE Globecom Workshops: the First International Workshop on Full Duplex Wireless Communications (GC16 Workshop FDWC), Washington, USA, Dec. 2016

103. S. Hanna, A. Guirguis, M. Mahdi, Y. El-Nakieb, M. Eldin, D. Saber, M. Youssef, M. ElNainay, A. El-Sherif, and **K. G. Seddik**"CRC: Collaborative Research and Teaching Testbed for Wireless Communications and Networks", The 10th ACM International Workshop on Wireless Network Testbeds, Experimental evaluation & CHaracterization (ACM WiNTECH), New York, USA, Oct. 2016

104. S. Hanna, **K. G. Seddik**, and A. El-Sherif, "Topology Realization using Gain Control for Wireless Testbeds", The 10th ACM International Workshop on Wireless Network Testbeds, Experimental evaluation & CHaracterization (ACM WiNTECH), New York, USA, Oct. 2016

105. M. S. Mohamed, T. ElBatt and **K. G. Seddik**, "Sparse Spectrum Sensing in Infrastructure-less Cognitive Radio Networks via Binary Consensus Algorithms", IEEE International Symposium on Personal, Indoor and Mobile Radio Communications (PIMRC), Valencia, Spain, Sept. 2016

106. A. M. Elmahdy, A. El-Keyi, Y. Mohasseb, T. ElBatt, M. Nafie and **K. G. Seddik**, "Asymmetric Degrees of Freedom of the Full-Duplex MIMO 3-Way Channel", IEEE Information Theory Workshop (ITW), Cambridge, United Kingdom, Sept. 2016

107. K. M. Attiah, **K. G. Seddik**, R. Gohary, and H. Yanikomeroglu, "A Systematic Design Approach for Non-coherent Grassmannian Constellations", IEEE International Symposium on Information Theory (ISIT), Barcelona, Spain, July 2016

108. M. Abd-Elmagid, A. Biason, T. ElBatt, **K. G. Seddik** and Michele Zorzi, "On Optimal Policies in Full-Duplex Wireless Powered Communication Networks", 14th International Symposium on Modeling and Optimization in Mobile, Ad Hoc, and Wireless Networks (WiOpt), Tempe, USA, May 2016

109. A. M. Elmahdy, A. El-Keyi, T. ElBatt and **K. G. Seddik**, "On Optimizing Cooperative Cognitive User Performance under Primary QoS Constraints", IEEE Wireless Communication and Networking Conference (WCNC), Doha, Qatar, April 2016

110. A. G. Mohamed, **K. G. Seddik** and A. Elezabi, "PMUs Placement with Max-Flow Min-Cut Communication Constraint in Smart Grids", IEEE Wireless Communication and Networking Conference (WCNC), Doha, Qatar, April 2016

111. O. Mostafa, **K. G. Seddik** and A. Elezabi, "Unequal Error Protection for Impulsive Noise Channels in Power Line Communications", IEEE International Symposium on Power Line Communications and its Applications (ISPLC), Bottrop, Germany, March 2016

112. R. Sultan, L. Song, **K. G. Seddik** and Z. Han, "Users Association in Small Cell Networks with Massive MIMO", International Conference on Computing, Networking and Communications (ICNC), Kauai, USA, Feb. 2016 [invited]

113. M. AbdAlZaher, **K. G. Seddik**, O. Muta and A. Bedair, "Using Stackelberg Game to Enhance Node Protection in WSNs", 13th Annual IEEE Consumer Communications and Networking Conference (CCNC), Las Vegas, USA, Jan. 2016

114. M. A. Attia, M. Shaqfeh, **K. G. Seddik** and H. Alnuweiri, "Jointly Optimal Power and Rate Allocation for Layered Broadcast Over Amplify-and-Forward Relay Channels", IEEE Global Conference on Signal and Information Processing (GlobalSIP), Orlando, FL, Dec. 2015

115. A. Bedewy, A. El-Sherif, **K. G. Seddik** and T. ElBatt, "Cooperative MAC for Cognitive Radio Network with Energy Harvesting and Randomized Service Policy", IEEE Globecom 2015 Workshop on Advances in Software Defined Radio Access Networks and Context-aware Cognitive Networks (SDRANCAN-2015), San Diego, CA, USA, Dec. 2015

116. M. T. Hussien, **K. G. Seddik**, R. Gohary, M. Shaqfeh, H. Alnuweiri and H. Yanikomeroglu, "Space-Time Block Codes over the Stiefel Manifold", IEEE Global Telecommunications Conference (GLOBECOM), San Diego, CA, USA, Dec. 2015

117. M. Abd-Elmagid, T. ElBatt and **K. G. Seddik**, "Optimization of Wireless Powered Communication Networks with Heterogeneous Nodes", IEEE Global Telecommunications Conference (GLOBECOM), San Diego, CA, USA, Dec. 2015

118. A. Guirguis, M. Ibrahim, **K. G. Seddik**, K. A. Harras, F. Digham and M. Youssef, "Primary User Aware k-hop Routing for Cognitive Radio Networks", IEEE Global Telecommunications Conference (GLOBECOM), San Diego, CA, USA, Dec. 2015

119. M. Medhat, **K. G. Seddik** and A. Elezabi, "Channel Estimation and Tracking Algorithms for Harsh Vehicle to Vehicle Environments", IEEE 82nd Vehicular Technology Conference: VTC2015-Fall, Boston, USA, Sept. 2015

120. R. Sultan, L. Song, **K. G. Seddik**, Y. Li and Z. Han, "Mode Selection, User Pairing, Subcarrier Allocation and Power Control in Full-Duplex OFDMA HetNets", IEEE ICC Workshops - 4th International Workshop on Small Cell and 5G Network (SmallNets), London, UK, June 2015

121. A. Anwar, **K. G. Seddik**, T. ElBatt and A. Zahran, "On the Effective Capacity of Delay Constrained Cognitive Radio Networks with Relaying Capability", Crowncom Workshops - Cognitive Radio for 5G Networks, Doha, Qatar, April 2015 [invited]

122. M. Abdel-Malek, **K. G. Seddik**, T. ElBatt and Y. Mohasseb, "Effective Capacity and Delay Optimization in Cognitive Radio Networks", the 10th International Conference on Cognitive Radio Oriented Wireless Networks (Crowncom), Doha, Qatar, April 2015

123. A. G. Mohamed, **K. G. Seddik** and A. Elezabi, "Joint Estimation-Detection of Cyber Attacks in Smart Grids: Bayesian and Non-Bayesian Formulations", IEEE Wireless Communication and Networking Conference (WCNC), New Orleans, LA, USA, March 2015

124. A. Bedewy, **K. G. Seddik** and A. A. El-Sherif, "On the Stability of Random Access with Energy Harvesting and Collision Resolution", IEEE Global Telecommunications Conference (GLOBECOM), Austin, Texas, USA, Dec. 2014

125. M. A. Attia, M. Shaqfeh, **K. G. Seddik** and H. Alnuweiri, "Optimal Power Allocation for Layered Broadcast Over Amplify-and-Forward Relay Channels", IEEE Global Conference on Signal and Information Processing (GlobalSIP), Atlanta, Georgia, Dec. 2014

126. **K. G. Seddik** and A. A. El-Sherif, "A POMDP Framework for Cognitive MAC Based on Primary Feedback Exploitation", IEEE Global Conference on Signal and Information Processing (GlobalSIP), Atlanta, Georgia, USA, Dec. 2014

127. R. E. Ali, F. Digham, **K. G. Seddik**, M. Nafie, A. El-Keyi and Z. Han, "A Probabilistic MAC for Cognitive Radio Systems with Energy Harvesting Nodes", IEEE Global Conference on Signal and Information Processing (GlobalSIP), Atlanta, Georgia, USA, Dec. 2014

128. A. Ismail and **K. G. Seddik**, "A Mixed-Method Approach to Fault Tolerance and Management for Resilient Hierarchical Routing", the 6th International Congress on Ultra Modern Telecommunications and Control Systems (ICUMT), St. Petersburg, Russia, Oct. 2014.

129. A. M. Elmahdy, A. El-Keyi, T. ElBatt and **K. G. Seddik,** "On the Stable Throughput of Cooperative Cognitive Radio Networks with Finite Relaying Buffer", IEEE International Symposium on Personal, Indoor and Mobile Radio Communications (PIMRC), Washington DC, USA, Sept. 2014

130. A. Ismail and **K. G. Seddik**, "The Design and Implementation of a Constrained WSN for Permaculture Farming in Egypt", IEEE International Conference on Emerging Technologies and Factory Automation (ETFA), Barcelona, Spain, Sept. 2014

131. A. Elzanati, M. Abdelkader, **K. G. Seddik** and A. Ghuniem, "Adaptive Spectrum Hole Detection Using Sequential Compressive Sensing", the International Wireless Communications and Mobile Computing Conference (IWCMC 2014), Nicosia, Cyprus, Aug. 2014

132. M. A. Attia, M. Shaqfeh, **K. G. Seddik** and H. Alnuweiri, "Power Optimization for Layered Transmission Over Decode-and-Forward Relay Channels", the International Wireless Communications and Mobile Computing Conference (IWCMC 2014), Nicosia, Cyprus, Aug. 2014

133. **K. G. Seddik**, "On the Stability of Random Multiple Access with Feedback Exploitation and Queue Priority", IEEE International Symposium on Information Theory (ISIT), Honolulu, HI, USA, June-July 2014

134. M. T. Hussien, **K. G. Seddik**, R. Gohary, M. Shaqfeh, H. Alnuweiri and H. Yanikomeroglu, "Multi-Resolution Broadcasting Over the Grassmann and Stiefel Manifolds", IEEE International Symposium on Information Theory (ISIT), Honolulu, HI, USA, June-July 2014

135. M. H. Karmoose, **K. G. Seddik** and A. K. Sultan, "Performance Evaluation of Censoring-Enabled Systems for Sequential Detection in Large Wireless Sensor Networks", the 10th International Workshop on Wireless Network Measurements and Experimentation (WiNMeE 2014) (WiOpt Workshop), Hammamet, Tunisia, May 2014

136. R. E. Ali, **K. G. Seddik**, M. Nafie and F. Digham, "A Pricing-Based Cooperative Spectrum Sharing Stackelberg Game", Modeling and Optimization in Mobile, Ad Hoc and Wireless Networks (WiOpt), Hammamet, Tunisia, May 2014

137. M. T. Hussien, **K. G. Seddik**, M. Shaqfeh and H. Alnuweiri, "Layered Coding with Non-Coherent and Coherent Layers Over Fading Channels", Modeling and Optimization in Mobile, Ad Hoc and Wireless Networks (WiOpt), Hammamet, Tunisia, May 2014

138. A. Alwakeel, M. Abdelkader, **K. G. Seddik** and A. Ghuniem, "Exploiting Temporal Correlation of Sparse Signals in Wireless Sensor Networks", IEEE 79th Vehicular Technology Conference: VTC2014-Spring, Seoul, Korea, May 2014

139. F. Salib and **K. G. Seddik**, "Hierarchical Prior Zero-Forcing for Cognitive Relaying", IEEE International Symposium on Dynamic Spectrum Access Networks (DySPAN), McLean, VA, April 2014

140. A. Arafa, **K. G. Seddik**, A. K. Sultan, T. ElBatt and A. A. El-Sherif, "A Feedback- Soft Sensing-Based Cognitive Access Scheme with Feedback Erasures", IEEE Wireless Communication and Networking Conference (WCNC), Istanbul, Turkey, April 2014

141. A. Alwakeel, M. Abdelkader, **K. G. Seddik** and A. Ghuniem, "Adaptive Low Power Detection of Sparse Events in Wireless Sensor Networks", IEEE Wireless Communication and Networking Conference (WCNC), Istanbul, Turkey, April 2014

142. I. Elbakoury, **K. G. Seddik** and A. Alezabi, "Opportunistic Relaying with Partial CSI and Dynamic Resource Allocation", IEEE Global Conference on Signal and Information Processing (GlobalSIP), Austin, Texas, Dec. 2013

143. F. Salib and **K. G. Seddik**, "Exploiting Spatial Spectrum Holes in Multiuser MIMO systems", the 47th Asilomar Conference on Signals, Systems and Computers, Pacific Grove, CA, Nov. 2013

144. M. A. El-Aziz, **K. G. Seddik**, A. Alezabi, and M. Nafie, "Performance and Complexity Comparison of Near-Optimal MIMO Decoders", the 47th Asilomar Conference on Signals, Systems and Computers, Pacific Grove, CA, Nov. 2013

145. M. Omar, A. El-Mahmoudy, **K. G. Seddik**, and A. Elezabi, "On the Tail-Biting Convolutional Code Decoder for the LTE and LTE-A Standards", the 47th Asilomar Conference on Signals, Systems and Computers, Pacific Grove, CA, Nov. 2013

146. A. M. Elmahdy, S. Sorour and **K. G. Seddik**, "Generalized Instantly Decodable Network Coding for Relay-Assisted Networks", IEEE International Symposium on Personal, Indoor and Mobile Radio Communications (PIMRC), London, UK, Sept. 2013

147. Y. H. Ezzeldin, R. Sultan and **K. G. Seddik**, "Sparse Reconstruction-Based Detection of Spatial Dimension Holes in Cognitive Radio Networks", IEEE International Symposium on Personal, Indoor and Mobile Radio Communications (PIMRC), London, UK, Sept. 2013

148. R. Sultan and **K. G. Seddik**, "A Spatial Incremental Relaying-Based User Transparent ARQ Protocol", IEEE Workshop on Signal Processing Advances in Wireless Communications (SPAWC), Darmstadt, Germany, June 2013

149. A. Anwar, **K. G. Seddik**, T. ElBatt and A. Zahran, "Effective Capacity of Delay Constrained Cognitive Radio Links Exploiting Primary Feedback", Modeling and Optimization in Mobile, Ad Hoc and Wireless Networks (WiOpt), Tsukuba Science City, Japan, May 2013

150. A. Bedewy, **K. G. Seddik** and A. Elezabi, "A Feedback-based Access Scheme for Cognitive Radio Networks Over Interference Channels with Primary Queue Guarantees", Modeling and Optimization in Mobile, Ad Hoc and Wireless Networks (WiOpt), Tsukuba Science City, Japan, May 2013

151. A. Elzanati, M. Abdelkader, **K. G. Seddik** and A. Ghuniem, "Collaborative Compressive Spectrum Sensing Using Kronecker Sparsifying Basis", IEEE Wireless Communication and Networking Conference (WCNC), Shanghai, China, April 2013

152. N. Diaa El-Din, E. Sourour, **K. G. Seddik** and I. Ghaleb, "Coordinated Partial Co-Channel Deployment in Two-Layer Networks", International Conference on Computing, Networking and Communications (ICNC), San Diego, CA, Jan. 2013

153. M. H. Karmoose, **K. G. Seddik** and H. Elkamchouchi, "Censoring for Type-Based Multiple Access Scheme in Wireless Sensor Networks", IEEE 76th Vehicular Technology Conference: VTC2012-Fall, Québec City, Canada, Sept. 2012

154. M. Nafea, D. Hamza, **K. G. Seddik**, M. Nafie, and H. El Gamal, "On the ARQ Protocols over the Z-interference Channels: Diversity-Multiplexing-Delay Tradeoff", IEEE International Symposium on Information Theory (ISIT), Cambridge, MA, USA, July 2012

155. A. Arafa, **K. G. Seddik**, A. K. Sultan, T. ElBatt and A. A. El-Sherif, "A Soft Sensing-Based Cognitive Access Scheme Exploiting Primary Feedback", Modeling and Optimization in Mobile, Ad Hoc and Wireless Networks (WiOpt), Paderborn, Germany, May 2012

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157. N. Helal, **K. G. Seddik**, A. El-Keyi and T. ElBatt, "A Feedback-Based Access Scheme for Cognitive-Relaying Networks", IEEE Wireless Communication and Networking Conference (WCNC), Paris, France, April 2012

158. A. K. Sultan, A. A. El-Sherif, and **K. G. Seddik**, "Cognitive Multiple Access Using Soft Sensing and Secondary Channel State Information", IEEE Wireless Communication and Networking Conference (WCNC), Paris, France, April 2012

159. **K. G. Seddik**, A. K. Sultan, A. A. El-Sherif, and A. M. Arafa, "A Feedback-Based Access Scheme for Cognitive Radio Systems", IEEE Workshop on Signal Processing Advances for Wireless Communications (SPAWC), San Francisco, CA, July 2011

160. **K. G. Seddik**, A. K. Sultan, and A. A. El-Sherif, "Censoring for Improved Performance of Distributed Detection in Wireless Sensor Networks", IEEE Workshop on Signal Processing Advances for Wireless Communications (SPAWC), San Francisco, CA, July 2011

161. A. A. El-Sherif, A. K. Sultan, and **K. G. Seddik**, "Soft Sensing-Based Multiple Access for Cognitive Radio Networks", IEEE Global Telecommunications Conference (GLOBECOM), Miami, Florida, Dec. 2010

162. M. W. Baidas, A. S. Ibrahim, **K. G. Seddik**, and K. J. R. Liu, "On the Impact of Correlation on Distributed Detection in Wireless Sensor Networks with Relays Deployment", IEEE International Conference on Communications (ICC), Dresden, Germany, June 2009

163. **K. G. Seddik** and K. J. R. Liu, "On Relay Nodes Deployment for Distributed Detection in Wireless Sensor Network", IEEE Global Telecommunications Conference (GLOBECOM), New Orleans, LA, Nov./Dec. 2008

164. **K. G. Seddik**, A. Kwasinski, and K. J. R. Liu, "Asymptotic Distortion Performance of Source-Channel Diversity Schemes over Relay Channels", IEEE Wireless Communication and Networking Conference (WCNC), Las Vegas, NV, April 2008

165. **K. G. Seddik** and K. J. R. Liu, "Distributed Space-Frequency Coding over Amplify-and-Forward Relay Channels", IEEE Wireless Communication and Networking Conference (WCNC), Las Vegas, NV, April 2008

166. A. S. Ibrahim, **K. G. Seddik**, and K. J. R. Liu, "Connectivity-Aware Network Maintenance and Repair via Relays Deployment", IEEE Wireless Communication and Networking Conference (WCNC), Las Vegas, NV, April 2008

167. **K. G. Seddik**, A. K. Sadek, A. S. Ibrahim, and K. J. R. Liu, "Synchronization-Aware Distributed Space-Time Codes in Wireless Relay Networks", IEEE Global Telecommunications Conference (GLOBECOM), Washington D.C., Nov. 2007

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169. A. S. Ibrahim, **K. G. Seddik**, and K. J. R. Liu, "Improving Connectivity via Relays Deployment in Wireless Sensor Networks", IEEE Global Telecommunications Conference (GLOBECOM), Washington D.C., Nov. 2007

170. **K. G. Seddik**, A. Kwasinski, and K. J. R. Liu, "Distortion Exponents for Different Source-Channel Diversity Achieving Schemes over Multi-Hop Channels", IEEE International Conference on Communications (ICC), Glasgow, Scotland, June 2007

171. **K. G. Seddik**, A. K. Sadek, and K. J. R. Liu, "Protocol-Aware Design Criteria and Performance Analysis for Distributed Space-Time Coding", IEEE Global Telecommunications Conference (GLOBECOM), San Francisco, CA, Nov. 2006

172. **K. G. Seddik**, A. K. Sadek, W. Su, and K. J. R. Liu, "Outage Analysis of Multi-Node Amplify-and-Forward Relay Networks", IEEE Wireless Communications and Networking Conference (WCNC), Las Vegas, NV, April 2006

173. I. Ghaleb, O. A. Alim, and **K. G. Seddik**, "A new finite alphabet based blind channel estimation for OFDM systems", IEEE Workshop on Signal Processing Advances in Wireless Communications (SPAWC), pp.102–105, Lisbon, Portugal, July 2004

Professional Activities

◇ Senior Member, IEEE

◇ President, The Egyptian Committee for the International Union of Theoretical and Applied Mechanics (EC-IUTAM), March 2023 - June 2025

◇ Editor on the inaugural Editorial Board of the IEEE Transactions on Machine Learning in Communications and Networking

◇ Associate Editor for Frontiers in Communications and Networks - Specialty Area: Data Science for Communications

◇ Member of The Honor Society of Phi Kappa Phi

◇ IEEE Student Branch Advisor (American University in Cairo), 2019-2020

◇ Student Branch Advisor (Alexandria University), IEEE Alexandria & North Delta Subsection, 2010-2011

◇ IEEE Egypt/Alexandria Subsection Committee Member, Membership Development, 2010-2013

◇ Keynote Speaker

- The IEEE Conference on the Intelligent Methods, Systems, and Applications (IMSA), Cairo, Egypt, 2023

◇ Conference Organizing Committees

- Track Chair: 2025 IEEE Middle East Conference on Communications and Networking (MECOM)
- Workshops' Co-Chair: 16th EAI International Conference on Mobile and Ubiquitous Systems: Computing, Networking and Services (MobiQuitous), 2019

◇ Technical Program Committee (TPC)

- IEEE Symposium on Computers and Communications (IEEE-ISCC)
- The International Conference on Communications, Signal Processing, and their Applications (ICCSPA), 2026
- IEEE Wireless Communication and Networking Conference (WCNC), 2026
- IEEE Conference on Standards for Communications & Networking (IEEE CSCN), 2025
- IEEE Global Telecommunications Conference (GLOBECOM), 2025
- IEEE Symposium on Computers and Communications (ISCC), 2025
- International Conference on Wireless and Mobile Computing, Networking and Communications (WiMob), 2025
- The International Wireless Communications and Mobile Computing Conference (IWCMC), 2025
- IEEE ICC 2025 Seventh International Workshop on Data Driven Intelligence for Networks and Systems (DDINS), 2025
- IEEE World Forum on Internet of Things (WF-IoT), 2025
- IEEE Vehicular Technology Conference (VTC-Spring), 2025
- IEEE Wireless Communication and Networking Conference (WCNC), 2025
- IEEE Conference on Standards for Communications & Networking (IEEE CSCN), 2024
- IEEE World Forum on Internet of Things (WF-IoT), 2024
- IEEE Canadian Conference on Electrical and Computer Engineering (CCECE), 2024
- International Conference on Wireless and Mobile Computing, Networking and Communications (WiMob), 2024
- IEEE International Symposium on Personal, Indoor and Mobile Radio Communications (PIMRC), 2024
- IEEE ICC Workshop on AI-ML-Powered Autonomous Telco Networks (IEEE ICC 2024 Workshop - APATN), 2024
- The International Wireless Communications and Mobile Computing Conference (IWCMC), 2024
- IEEE ICC 2024 Sixth International Workshop on Data Driven Intelligence for Networks and Systems (DDINS), 2024
- IEEE Symposium on Computers and Communications (ISCC), 2024
- IEEE Wireless Communication and Networking Conference (WCNC), 2024
- The 6th International Conference on Communications, Signal Processing, and their Applications (ICCSPA), 2024
- IEEE Conference on Standards for Communications and Networking (CSCN), 2023
- IEEE Future Networks World Forum (FNWF), 2023
- The International Wireless Communications and Mobile Computing Conference (IWCMC), 2023

– IEEE International Symposium on Personal, Indoor and Mobile Radio Communications (PIMRC), 2023
– International Conference on Wireless and Mobile Computing, Networking and Communications (WiMob), 2023
– IEEE Vehicular Technology Conference (VTC-Spring), 2023
– IEEE Wireless Communication and Networking Conference (WCNC), 2023
– IEEE Vehicular Technology Conference (VTC-Fall), 2022
– IEEE International Symposium on Personal, Indoor and Mobile Radio Communications (PIMRC), 2022
– International Workshop on e-Health Pervasive Wireless Applications and Services (eHPWAS), 2022
– IEEE Future Networks World Forum (IEEE FNWF), 2022
– IEEE International Mediterranean Conference on Communications and Networking (IEEE MeditCom), 2022
– International Conference on Wireless and Mobile Computing, Networking and Communications (WiMob), 2022
– The International Wireless Communications and Mobile Computing Conference (IWCMC), 2022
– IEEE Vehicular Technology Conference (VTC-Spring), 2022
– IEEE ICC Workshop, IEEE International Workshop on Data Driven Intelligence for Networks and Systems (DDINS), 2022
– IEEE Wireless Communication and Networking Conference (WCNC), 2022
– IEEE 5G World Forum, 2021
– IEEE International Symposium on Personal, Indoor and Mobile Radio Communications (PIMRC), 2021
– International Conference on Wireless and Mobile Computing, Networking and Communications (WiMob), 2021
– The International Wireless Communications and Mobile Computing Conference (IWCMC), 2021
– IEEE Vehicular Technology Conference (VTC-Spring), 2021
– IEEE Wireless Communication and Networking Conference (WCNC), 2021
– IEEE International Symposium on Personal, Indoor and Mobile Radio Communications (PIMRC), 2020
– IEEE 5G World Forum, 2020
– International Conference on Wireless and Mobile Computing, Networking and Communications (WiMob), 2019
– IEEE Vehicular Technology Conference (VTC-Fall), 2019
– IEEE International Symposium on Personal, Indoor and Mobile Radio Communications (PIMRC), 2019
– IEEE 5G World Forum, 2019
– IEEE Wireless Communication and Networking Conference (WCNC), 2019
– The International Wireless Communications and Mobile Computing Conference (IWCMC), 2019
– IEEE Global Telecommunications Conference (GLOBECOM), 2018

- International Conference on Wireless and Mobile Computing, Networking and Communications (WiMob), 2018
- IEEE Globecom Workshop on Emerging Technologies for 5G Wireless Cellular Networks, 2018
- IEEE International Symposium on Personal, Indoor and Mobile Radio Communications (PIMRC), 2018
- The International Wireless Communications and Mobile Computing Conference (IWCMC), 2018
- IEEE Vehicular Technology Conference (VTC-Spring), 2018
- IEEE 5G WORLD FORUM (WF-5G), 2018
- IEEE Global Telecommunications Conference (GLOBECOM), 2017
- IEEE Globecom Workshop on Emerging Technologies for 5G Wireless Cellular Networks, 2017
- IEEE International Symposium on Personal, Indoor and Mobile Radio Communications (PIMRC), 2017
- IEEE International Conference on Wireless and Mobile Computing, Networking and Communications (WiMob), 2017
- The International Wireless Communications and Mobile Computing Conference (IWCMC), 2017
- IEEE Globecom Workshop on Emerging Technologies for 5G Wireless Cellular Networks, 2016
-
- IEEE International Symposium on Personal, Indoor and Mobile Radio Communications (PIMRC), 2016
- IEEE International Conference on Wireless and Mobile Computing, Networking and Communications (WiMob), 2016
- International Workshop on the M2M and H2H Communications, 2016
- IEEE Global Telecommunications Conference (GLOBECOM), 2015
- IEEE Globecom Workshop on Emerging Technologies for 5G Wireless Cellular Networks, 2015
- IEEE International Symposium on Personal, Indoor and Mobile Radio Communications (PIMRC), 2015
- IEEE International Conference on Wireless and Mobile Computing, Networking and Communications (WiMob), 2015
- International Conference on Cognitive Radio Oriented Wireless Networks (CROWNCOM), 2015
- IEEE International Symposium on Signal Processing and Information Technology (ISSPIT), 2014
- Globecom Workshop - Emerging Technologies for 5G Wireless Cellular Networks, 2014
- IEEE International Symposium on Personal, Indoor and Mobile Radio Communications (PIMRC), 2014
- IEEE International Conference on Wireless and Mobile Computing, Networking and Communications (WiMob), 2014
- IEEE Symposium on Wireless Technology & Applications (ISWTA), 2013, 2014
- The International Conference on Connected Vehicles & Expo (ICCVE), 2012, 2013, 2014, 2015
- IEEE Student Conference on Research and Development (SCOReD), 2012
- IEEE Global Telecommunications Conference (GLOBECOM), 2012
- International Conference on Computer Communication Networks (ICCCN), 2011
- IEEE Vehicular Technology Conference (VTC): Spring 2010, Fall 2010

- International Wireless Communications and Mobile Computing Conference (IWCMC), 2007
◇ Book Proposals Reviewer: CRC Press/Taylor and Francis Group
◇ Reviewer for IEEE Journals

- IEEE Transactions on Information Theory
- IEEE Transactions on Signal Processing
- IEEE Transactions on Communications
- IEEE Journal on Selected Areas in Communications (JSAC)
- IEEE Transactions on Wireless Communications
- IEEE Communications Magazine
- IEEE Transactions on Mobile Computing
- IEEE Access
- IEEE Transactions on Computers
- IEEE Transactions on Image Processing
- IEEE Transactions on Vehicular Technology
- IEEE Transactions on Information Forensics and Security
- IEEE Transactions on Network and Service Management
- IEEE Communications Letters
- IEEE Wireless Communications Letters
- IEEE Signal Processing Letters
- IEEE Transactions on Cognitive Communications and Networking
- IEEE Journal on Selected Areas in Information Theory (JSAIT)
- IEEE Transactions on Machine Learning in Communications and Networking
- IEEE Transactions on Intelligent Vehicles
- IEEE Open Journal of the Communications Society
- IEEE Transactions on Network and Service Management
- The Computer Journal

◇ Reviewer for Computer Communications, Elsevier
◇ Reviewer for the Journal of Wireless Networks, Springer
◇ Reviewer for European Transactions on Telecommunications
◇ Reviewer for EURASIP Journal on Advances in Signal Processing
◇ Reviewer for EURASIP Journal on Wireless Communications and Networking
◇ Reviewer for International Journal of Communication Networks and Distributed Systems
◇ Reviewer for the Journal of Systems and Software, Elsevier
◇ Grants Reviewer

- Egyptian National Telecommunication Regulatory Agency (NTRA) (NTRA Research Funds)
- Binational Fulbright commission in Egypt (Fulbright Egyptian Scholar Program), 2012 and 2018
- Borg El Arab Innovation Cluster Reviewers Panel (joint with ITIDA)
- Arab-Gulf Cooperation Council (GCC) Countries Engineering Students Design Competition, 2013

Former PhD and MSc Students (Advisor or Co-Advisor)

1. **Shorouk Abou Amasha, MSc 2025**
   Master Thesis Title: Load Balancing in Mobile Networks Using Deep Reinforcement Learning and Traffic Prediction

2. **Mohamed T. Ismail, MSc 2022**
   Master Thesis Title: Enhanced Data Sampling and Feature Generation for Machine Learning-based Lithography Hotspot Detection

3. **Mariam Aboelwafa, PhD 2021**
   PhD Thesis Title: Network Management, Optimization and Security with Some Machine Learning Applications in Wireless Networks

4. **Mohamed W. Nomeir, MSc 2021**
   Master Thesis Title: Machine Learning Based Critical Resource Allocation in Mixed-Traffic Cellular Networks

5. **Amr Kassab, MSc 2021**
   Master Thesis Title: Latency Optimization in Smart Meter Networks

6. **Ehab Elguindy, MSc 2020**
   Master Thesis Title: Reinforcement Learning-based Access Schemes in Cognitive Radio Networks

7. **Ali Gaber, PhD 2020**
   PhD Thesis Title: Cooperative Delay-Constrained Cognitive Radio Networks with Full-Duplex Capability: Secondary User Throughput Maximization and Delay-Throughput Trade-off

8. **Sara Attalla, PhD 2020**
   PhD Thesis Title: Unequal Error Protection for Power Line Communications over Impulsive Noise Channels

9. **Kareem Attia, MSc 2019**
   MSc Thesis Title: Unequal Error Protection for Power Line Communications over Impulsive Noise Channels

10. **Mahmoud Alaa, MSc 2019**
    MSc Thesis Title: Unequal Error Protection for Power Line Communications over Impulsive Noise Channels

11. **Osama Mostafa, MSc 2018**
    Master Thesis Title: Unequal Error Protection for Power Line Communications over Impulsive Noise Channels

12. **Mahmoud El Hosainy, MSc 2017**
    Master Thesis Title: Improved Fault-Tolerant PMU Placement using Algebraic Connectivity of Graphs

13. **Mohamed Abd-Elmagid, MSc 2017**
    Master Thesis Title: Optimization of Wireless Powered Communication Networks

14. **Mohamed A. Elmossallamy, MSc 2017**
    Master Thesis Title: Noncoherent MIMO Codes for Low-Medium SNRs, and Layered MIMO Space-Time Coding for Coherent and Noncoherent Receivers

15. **Mohamed Salah, PhD 2016**
    PhD Thesis Title: Application of Game Theory for Security Requirements and Threats Mitigation in Wireless Sensor Networks

16. **Mohamed Seif, MSc 2016**
    Master Thesis Title: Interference Management in Spectrally and Energy Efficient Wireless Networks

17. **Mai A. Abdel-Malek, MSc 2015**
    Master Thesis Title: Effective Capacity and Delay Optimization in Cognitive Radio Networks

18. **Mohamed T. Hussein, MSc 2015**
    Master Thesis Title: MIMO Layered Space-Time Coding with Coherent and Non-coherent Receivers

19. **Ali G. Ali, MSc 2015**
    Master Thesis Title: Smart Grids: Cyber Attacks Joint Detection-Estimation and PMU Placement with Communication Constraints

20. **Mohamed A. Attia, MSc 2015**
    Master Thesis Title: Resource Allocation for Layered Broadcast over Relay-Assisted Channels

21. **Moustafa Medhat, MSc 2015**
    Master Thesis Title: Channel Estimation and Tracking Algorithms for Vehicle to Vehicle Communications

22. **Ahmed Bedewy, MSc 2015**
    Master Thesis Title: Cognitive MAC Design with Cooperation and Energy Harvesting

23. **Yahya Ezzeldin, MSc 2014**
    Master Thesis Title: Lattices in Wireless Communications: Interference Alignment and Lattice-based LDPC Codes

24. **Ramy Ali, MSc 2014**
    Master Thesis Title: On Dynamic Spectrum Sharing: Pricing and Energy-Based Secondary Spectrum Access

25. **Ahmed Ismail, MSc 2014**
    Master Thesis Title: Feasibility Study on the Design and Implementation of a Constrained WSN for Permaculture Farming in Egypt

26. **Ahmed Alwakeel, MSc 2014**
    Master Thesis Title: Performance Improvement of Compressive Data Gathering in Wireless Sensor Networks

27. **Radwa Sultan, MSc 2013**
   Master Thesis Title: Exploiting Spatial Holes in Wireless Communication Systems

28. **Feeby Salib, 2013**
   Master Thesis Title: Some MIMO Applications in Cognitive Radio Networks

29. **Mohammed Karmoose, MSc 2013**
   Master Thesis Title: Censoring for Distributed Detection Systems in Wireless Sensors Networks

30. **Islam El Bakoury, MSc 2013**
   Master Thesis Title: Resource Allocation for Different Relaying Protocols in Cooperative Communications

31. **Ahmed Zanaty, MSc 2013**
   Master Thesis Title: Collaborative Approaches for Compressive Spectrum Sensing in Cognitive Radio Networks

32. **Ahmed Arafa, MSc 2012**
   Master Thesis Title: Feedback-Based Access Schemes for Cognitive Radio Networks

33. **Noha Helal, MSc 2012**
   Master Thesis Title: Cooperative Relaying in Cognitive Radio Networks

34. **Mohammed Nafea, MSc 2012**
   Master Thesis Title: On the Z-interference Channel: Diversity-Multiplexing-Delay Tradeoff

35. **Mohammed Zakaria Ibrahim, MSc 2011**
   Master Thesis Title: Spectrum Sensing in Cognitive Radio Systems

Work Experience

◇ **Associate Dean for Graduate Studies and Research**, (July 20 - Present)
School of Sciences and Engineering (SSE)
American University in Cairo (AUC), Egypt

◇ **PhD Programs Graduate Director**, (July 20 - Present)
School of Sciences and Engineering (SSE)
American University in Cairo (AUC), Egypt

◇ **Youssef Jameel Science and Technology Research Center (YJ-STRC) Director**, (July 20 - Present)
School of Sciences and Engineering (SSE)
American University in Cairo (AUC), Egypt

◇ **Professor**, (July 19 - Present)
American University in Cairo (AUC), Egypt

◇ **Associate Chair**, (Feb. 18 - Present)
Electronics and Communications Engineering Department
American University in Cairo (AUC), Egypt

◇ **Associate Professor**, (July 15 - June 2019)
American University in Cairo (AUC), Egypt

◇ **Assistant Professor**, (Sept. 11 - June 15)
American University in Cairo (AUC), Egypt
Teaching the courses: Fundamentals of Communications I, Fundamentals of Communications II,
Enabling Technologies for High Data Rate Communications, Estimation, Classification and Detection
Theory, and Information Theory and Coding.
Conducting research in the areas of wireless communications and networking.

◇ **Member of Department ABET Committee**, (April 13 - Dec. 14)
Electronics and Communications Engineering Department
American University in Cairo (AUC), Egypt

◇ **Graduate Director**, (Aug. 13 - Present)
Electronics and Communications Engineering Department
American University in Cairo (AUC), Egypt

◇ **Acting Graduate Director**, (Jan. 13 - Aug. 13)
Electronics and Communications Engineering Department
American University in Cairo (AUC), Egypt

◇ **Assistant Professor**, (Oct. 10 - Aug. 11)
Nile University, Egypt
Teaching the courses: Estimation and Detection (Fall 10), Digital Communications (Spring 11).
Conducting research in the areas of wireless communications and networking.

◇ **Assistant Professor**, (May 08 - Aug. 11)
Department of Electrical Engineering, Alexandria University, Egypt.
Teaching the courses: Modern Physics, Electronics.

◇ **Senior Systems Engineer + Consultant**, (Dec. 08 - June 2015)
WiMatek Systems Inc.- VarkonSemi
Developing a complete baseband implementation for the LTE system user equipment (UE). The
implementation supports up to two transmit antennas and up to 4×2 implementation for the
downlink.

◇ **Visiting Assistant Professor**, (March 09 - May 09, March 10 - May 10)
Department of Electrical Engineering, Beirut Arab University, Lebanon.
Teaching the following courses: Digital Communications, Wireless Communications, Optical Communications,
Microwave Devices, Communication Networks, Electromagnetic Fundamentals.

◇ **Future Faculty Program Teaching**, (Jan. 08 - May 08)
Department of Electrical and Computer Engineering, University of Maryland
As a part of my Future Faculty Program I have co-taught the Engineering Probability course.

◇ **Graduate Teaching Assistant**, (Jan. 08 - May 08)
Department of Electrical and Computer Engineering, University of Maryland.

◇ **Research Assistant**, (Sept. 04 - Dec. 06, June 07 - Dec. 07)
Department of Electrical and Computer Engineering, University of Maryland.
Research topic: Diversity in Cooperative Networks: How to Achieve and Where to Exploit?

◇ **Graduate Teaching Fellow**, (Jan. 07 - May 07)
Department of Electrical and Computer Engineering, University of Maryland
Assisted in teaching the Space-Time Signal Processing graduate course.

◇ **Teaching Assistant**, (Sept. 01 - July 04) Alexandria University, Egypt
Assisted in teaching: Microprocessor Architecture, Electronic Circuits, Optical Networks Design,
Logic Design, Introduction to Computers, Advanced Communication Systems.