Karim Banawan

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EDUCATION

- **University of Maryland** — College Park, MD, USA
  Ph.D., Electrical and Computer Engineering; GPA: 3.758/4.0 — December 2018
  Thesis title: Private Information Retrieval and Security in Networks.
  Advisor: Prof. Sennur Ulukus.

- **University of Maryland** — College Park, MD, USA
  M.Sc., Electrical Engineering. — December 2017

- **Alexandria University** — Alexandria, Egypt
  M.Sc., Electrical Engineering, Communication and Electronics section; GPA: 4.0/4.0 — September 2012
  Thesis title: Collaborative multiple input multiple output and turbo equalization
  techniques for the uplink of The LTE-Advanced system.
  Advisor: Prof. Essam Sourour.

- **Alexandria University** — Alexandria, Egypt
  B.Sc., Electrical Engineering, Communication and Electronics section; GPA: 3.863/4.0 (90.61%) — July 2008
  Graduation project: Advanced Technologies in wireless communication systems with mobile WiMAX system
  simulation and implementation on DSP kit.
  Advisor: Prof. Ibrahim Ghaleb.

EXPERIENCE

- **Assistant Professor** — American University in Cairo (AUC)
  Full-time appointment at the Electronics and Comm. Engineering Dept. — August 2024–present

- **Principal Systems Engineer** — Wasiela
  System level consultant for various feasibility studies and implementation projects — April 2020–present
  Projects include:
  - Ultra-reliable low latency codes (URLLC) feasibility study.
  - Adaptive noise canceling (ANC) module design and implementation.
  - Low latency OFDM transceiver feasibility study.
  - Digital/Analog loopback implementation of an FBMC transceiver.

- **Assistant Professor** — Alexandria University
  Tenure track position in Alexandria University — May 2019-August 2024
  - Taught several graduate and undergraduate courses either for semester-based bylaw or credit-hour-based
    bylaw, including:
    * Digital Communications (EEC 382, EEC 481, and old EE 481).
    * Advanced Communications (EE 485).
    * Data Communications/Computer Networks (EEC 483 and CC451).
    * Introduction to Logic Design (EEC 141).
    * Solid State Physics and Semiconductor Devices (EEC 232 and old EE 336).
    * Introductory Electronics.
  - Supervised undergraduate students doing their graduation projects for the communication and electronics
    engineering program or computer and communications engineering program in the following topics:
    * Reinforcement learning applications in indoor coverage design.
    * Load balancing in cellular networks using reinforcement learning.
    * Machine learning applications in next-generation networks.
    * Maneuvering agent for self-driving cars.
    * Skin disease identification using deep learning approaches.

- * Sign language teaching site.
- * MIMO precoder selection using reinforcement learning.
  - ○ Co-advised M.Sc. and Ph.D., students doing research in the following areas:
    - * Sparse signal processing.
    - * Physical layer security.
    - * Private information retrieval.
    - * MIMO interference channels.
    - * Intelligent reflecting surfaces.
    - * Age of information.
    - * Applications of machine learning in wireless communication, optical communication, and biomedical engineering.
  - ○ Students that I co-advised and awarded M.Sc. degree:
    - * Sarah Osama: Bounded Error Subset Selection for Sparse Channel Estimation.
    - * Dalia Ibrahim: Enhanced Transmission in Underwater Acoustic Channels using Matched and Sparse Orthogonal Frequency Division Multiplexing (OFDM) signals.
    - * Salma Samy: Trustworthy Smart Grid Operation

- **Adjunct (Part-Time) Assistant Professor**   Alamein International University
  Taught the logic design (ELE 234) course.   *Spring 2023*

- **Information Technology Institute (ITI) Instructor**   ITI-Ismailia Branch
  Taught the LTE/LTE-advanced course for Intakes 42 and 43.   *2022, and 2023*

- **Research Associate**   American University in Cairo (AUC)
  Joined "Machine learning applications in communication" project   *January 2019–September 2020*
  Worked on the following problems:
  - ○ Load balancing of cellular networks using cell individual offset and eNodeB transmission power using reinforcement learning techniques.
  - ○ Energy consumption reduction of cellular networks using reinforcement learning by switching MIMO transmission ON and OFF.
  - ○ Time series analysis of Internet traffic of the cellular networks.

- **Graduate Research Assistant**   University of Maryland, College Park
  Conduct research on information-theoretic security and privacy   *August 2013 – December 2018*
  Published 9 journal papers and 13 conference papers as a byproduct of this research.

- **Co-Instructor**   University of Maryland, College Park
  Co-teach Signals and Systems for the honor class (ENEE 322H)   *Fall 2017*
  This as teaching practicum of future faculty fellow program.

- **Graduate Teaching Assistant**   University of Maryland, College Park
  Teaching assistant of multiple undergraduate courses   *September 2014 – May 2016*
  Courses include: optical system design (ENEE 408E), Random Processes in Comm. and Control (ENEE 620), Communications Systems (ENEE 420), Elements of Discrete Signal Analysis (ENEE 222), and Digital Control Systems (ENEE 463).

- **Graduate Teaching Assistant**   Alexandria University, Egypt
  Teaching assistant of multiple undergraduate courses   *September 2008 – June 2013*
  Courses: Signal Processing, Analog/Digital Communication Theory, Optical Communication Systems, Advanced Communication Systems, Circuits Theory, Basic Electronics, Logic Design Methodologies, and Acoustic Basics.

- **Research Assistant**   Alexandria, Egypt
  Conduct research with The Cognitive Radio Networks Research Group at E-JUST   *September 2012–August 2013*

- **System level designer**   Fascila Technologies, Egypt
  Design of a 40nm ASIC transceiver for the Bluetooth low Energy (BLE)   *July 2011–October 2011*

SERVICE

- **IEEE Communications Society (ComSoc) Secretary** December 2022-present
  Serve as the IEEE ComSoc secretary of the Egypt's section

- **IEEE Alexandria Student Branch Counselor** January 2021-present
  Serve as an adviser to the Student Branch and its Officers.

- **IEEE Alexandria Subsection Board** January 2021-present
  Student activity officer and treasurer

- **Accreditation Committee of the Comm. and Electronics Eng. Program** November 2019-Now
  Active member of the accreditation committee of the electrical engineering department. *Alexandria University*
  The main tasks involve working on course description, program architecture, program evaluation criteria, learning methodologies, and preparing the self-study report.

- **Undergrad. Bylaw Committee of the Comm. and Electronics Eng. Program** October 2023-Now
  Active member of the committee responsible for updating the program bylaws for the next 5 years. Alexandria University

- **Proposing New Courses for the Graduate Bylaws** February 2021
  Proposed new courses, which were added to the graduate bylaws 2021. *Alexandria University*
  The courses include:
  EEC 761: Information Theory and its Applications.
  EEC 766: Space-Time Coding for Wireless Communication
  EEC 768: Optimization Techniques: Theory and its Applications
  EEC 869: Advanced Topics in Information Theory.

- **Associate Editor of Alexandria Engineering Journal** August 2022-present
  A member of the Editorial Board of Alexandria Engineering Journal

- **Review Editor of the Frontiers in Communications and Networks** May 2020-present
  Editorial Board of Communications Theory.

- **Technical Program Committee (TPC) member** 2019-2022

  IEEE Information Theory Workshop 2019 (ITW 2019).
  IEEE Global Communications Conference (GLOBECOM 2021, 2022, 2023)
  IEEE Wireless Communications and Networking Conference (WCNC 2022, 2023, 2024).
  IEEE International Conference on Computer Communications: AoI Workshop (INFOCOM 2023, 2024).
  International Telecommunications Conference (ITC-Egypt 2023).

- **Technical Reviewer (Journals)** November 2014 – Present
  Participate in peer-reviewing 100+ technical papers in high-impact journals of the field.
  in particular:
  IEEE Transactions on Information Theory
  IEEE Transactions on Communications
  IEEE Transactions on Wireless Communications
  IEEE Transactions on Information Forensics and Security
  IEEE Transactions on Signal Processing
  IEEE Transactions on Machine Learning in Communications and Networking
  IEEE Transactions on Vehicular Technology
  IEEE Transactions on Dependable and Secure Computing
  IEEE Journal of Selected Areas in Communications
  IEEE Journal of Selected Areas in Information Theory
  IEEE Journal of Selected Topics in Signal Processing
  IEEE Communication Letters
  IEEE Wireless Communication Letters
  IEEE Access
  SIAM Journal on Applied Algebra and Geometry
  MDPI Entropy,
  Elsevier Information Processing & Management journal.

- **Technical Reviewer (Conferences)**   November 2014 – Present
  Participate in reviewing technical papers in many reputable conferences of the field
  in particular:
    - **Information Theory:** ISIT, ITW, IWICT, ISITA.
    - **Wireless Communication:** GLOBECOM, ICC, WCNC, VTC, PIMRC, ICNC, INFOCOM.

HONORS & AWARDS

- **Author's metrics according to Google Scholar**   American University in Cairo (AUC)
  H-index of 23, I-10 of 29, and 2016 Citations.   *August 2024*

- **Author's metrics according to Scopus**   American University in Cairo (AUC)
  H-index of 19, and 1220 Citations.   *August 2024*

- **Distinguished International Publication Award**   Alexandria University
  Received a \$3500 publication prize for my research from 2019-2024   *July 2024*

- **Elevation to IEEE Senior Member**   IEEE
  Elevated to IEEE Senior Member grade for significant contributions to the profession.   *May 2024*

- **Stanford top 2% of most-cited scientists**   Alexandria University
  Appeared in Stanford's science-wide author databases of standardized citation indicators   *Sep. 2022, & Oct. 2023*

- **Jack Keil Wolf ISIT Student Paper Award**   Alexandria University
  Finalist out of 1000+ papers, Los Angeles, USA   *June 2020*
  For the paper "Private Set Intersection Using Multi-Message Symmetric Private Information Retrieval".

- **Best paper Award**   Alexandria University
  IEEE International Conference on SmartNets, Sharm El-Sheikh, Egypt.   *December 2019*
  For the paper " Privacy-Preserving Smart Parking System Using Blockchain and Private Information Retrieval".

- **ECE Distinguished Dissertation Award**   University of Maryland, College Park
  Winner with Dissertation, Private information retrieval and security in networks   *2018*
  ECE department's nominee for the A. James Clark School's Dean's Research Award.
  ECE department's nominee for Charles A. Caramello Distinguished Dissertation Award.

- **Qualcomm Innovation Fellowship**   University of Maryland, College Park
  Finalist out of 170 participating teams.   *2018*
  Finalist with the proposal "Private Information Retrieval in Networks: Fundamental Limits and Practical Schemes".

- **Graduation Day ITA 2018**   University of Maryland, College Park
  Oral presentation representing UMD   *2018*
  Participated in the "Graduation Day" at the Information Theory and Applications Workshop (ITA) 2018.

- **Future Faculty Program (FFP) Fellowship**   University of Maryland, College Park
  Completed all the requirements of the FFP   *Spring 2017-Spring 2018*

- **Jacob K. Goldhaber Award**   University of Maryland, College Park
  Graduate school travel grant   *2016 and 2018*

- **International Conference Student Support Award (ICSSA)**   University of Maryland, College Park
  Graduate school travel grant   *2016*

- **Clark School Distinguished Graduate Fellowship**   University of Maryland, College Park
  One year fellowship awarded to distinguished prospective graduate students   *Fall 2013-Spring 2014*

- **Distinguished TA award**   Alexandria University
  Awarded best TA of Electrical Engineering, the communication and electronics section   *February 2011 and July 2012*

- **B.Sc. honors**   Alexandria University
  Ranked 3rd among +360 students, awarded "Distiction with honor" degree   *July 2008*

- **Nahdet El Mahrousa's Young Innovators' Award**   Alexandria University
  Award to help foster long-term careers in the field of scientific innovation   *2007-2008*

Research Interests

Wireless Communications.	Information Theory.
Private Information Retrieval.	Physical Layer Security.
Machine learning for communication and networks	Age of Information
MIMO Communication.	Interference Channels.
Multicarrier Systems.	Adaptive and Iterative Multiuser Receivers.
Sparse signal processing	Intelligent Reflecting Surfaces.

Graduate Courses

Random Processes.	Advanced Signal Processing.
Convex Optimization.	Estimation and Detection.
Information Theory.	Wireless Communications.
Optimal Control.	Sparse Statistical Signal Processing &Learning
Game Theory I (ECON department).	Probability Theory I (STAT department).
Machine Learning (CMSC department).	Real Analysis I (MATH department).
Digital Communications.	Coding Theory.
Mobile Communications	Spread Spectrum Communications.

Publications

- **Journal Papers**
  Published/To Appear

    1. 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.

    2. **K. Banawan**, A. Arafa and K. G. Seddik, Timely Multi-Process Estimation Over Erasure Channels With and Without Feedback: Signal-Independent Policies, in IEEE Journal on Selected Areas in Information Theory, vol. 4, pp. 607-623, 2023.

    3. A. Maiyza, N. Korany, **K. Banawan**, H. Hassan, W. Sheta, VTGAN: hybrid generative adversarial networks for cloud workload prediction, Springer Journal of Cloud Computing, 12(97), June 2023.

    4. G. Alsuhli, **K. Banawan**, K. Attiah, A. Elezabi, K. Seddik, A. Gaber, M. Zaki, Y. Gadallah, Mobility Load Management in Cellular Networks: A Deep Reinforcement Learning Approach, IEEE Trans. on Mobile Computing, 22(3), pp. 1581-1598, March 2023.

    5. S. Vithana, **K. Banawan**, S. Ulukus, Semantic Private Information Retrieval, IEEE Trans. on Info. Theory, vol. 68, no. 4, pp. 2635-2652, April 2022

    6. Z. Wang, **K. Banawan**, S. Ulukus, Private Set Intersection: A Multi-Message Symmetric Private Information Retrieval Perspective, IEEE Trans. on Info.Theory, vol. 68, no. 3, pp. 2001-2019, March 2022.

    7. S. Elkhamy, D. Ibrahim, **K. Banawan**, Sparse Non-Orthogonal Frequency Division Multiplexing for Secure Transmission over Broadcast Channels, IEEE Access, IEEE Access, vol. 9, pp. 155651-155661, 2021.

    8. A. Arafa, **K. Banawan**, K. G. Seddik, and H. V. Poor, Sample, Quantize and Encode: Timely Estimation Over Noisy Channels, IEEE Trans. on Communications, vol. 69, no. 10, pp. 6485-6499, Oct. 2021

    9. Z. Wang, **K. Banawan**, and S. Ulukus, Multi-Party Private Set Intersection: An Information-Theoretic Approach, IEEE Jour. on Selected Areas in Information Theory, 2(1):366-379, March 2021.

    10. **K. Banawan** and S. Ulukus, Private Information Retrieval Through Wiretap Channel II: Privacy Meets Security, IEEE Trans. on Information Theory, IEEE Trans. on Info. Theory, 66(7):4129-4149, July 2020.

    11. **K. Banawan**, B. Arasli, Y.-P. Wei and S. Ulukus, The Capacity of Private Information Retrieval from Heterogeneous Uncoded Caching Databases, IEEE Trans. on Info. Theory, 66(6):3407-3416, June 2020.

12. **K. Banawan** and S. Ulukus, Noisy Private Information Retrieval: On Separability of Channel Coding and Information Retrieval, IEEE Trans. on Info. Theory, 65(12):8232-8249, December 2019.

13. Y.-P. Wei, **K. Banawan** and S. Ulukus, The Capacity of Private Information Retrieval with Partially Known Private Side Information, IEEE Trans. on Information Theory, IEEE Trans. on Info. Theory, 65(12):8222-8231, December 2019.

14. **K. Banawan** and S. Ulukus, Asymmetry Hurts: Private Information Retrieval Under Asymmetric Traffic Constraints, IEEE Trans. on Information Theory, 65(11):7628-7645, November 2019.

15. Y.-P. Wei, B. Arasli, **K. Banawan** and S. Ulukus, The Capacity of Private Information Retrieval from Decentralized Uncoded Caching Databases, Information, special issue on Private Information Retrieval: Techniques and Applications, 10(12), 372, November 2019.

16. **K. Banawan** and S. Ulukus, Secure Degrees of Freedom in Networks with User Misbehavior, Entropy, special issue on Multiuser Information Theory II, 21(10): 945, September 2019.

17. Y.-P. Wei, **K. Banawan** and S. Ulukus, Fundamental Limits of Cache-Aided Private Information Retrieval with Unknown and Uncoded Prefetching, IEEE Trans. on Information Theory, 65(5):3215-3232, May 2019.

18. **K. Banawan** and S. Ulukus, The Capacity of Private Information Retrieval from Byzantine and Colluding Databases, IEEE Trans. on Information Theory, 65(2):1206-1219, February 2019.

19. **K. Banawan** and S. Ulukus, Secure Degrees of Freedom Region of Static and Time-Varying Gaussian MIMO Interference Channel, IEEE Trans. on Information Theory, 65(1):444-461, January 2019.

20. **K. Banawan** and S. Ulukus, Multi-Message Private Information Retrieval: Capacity Results and Near-Optimal Schemes, IEEE Trans. on Information Theory, 64(10):6842-6862, October 2018.

21. Y.-P. Wei, **K. Banawan** and S. Ulukus, Cache-Aided Private Information Retrieval with Partially Known Uncoded Prefetching: Fundamental Limits, IEEE Jour. on Selected Areas in Communications, 36(6):1126-1139, June 2018.

22. **K. Banawan** and S. Ulukus, The Capacity of Private Information Retrieval from Coded Databases, IEEE Trans. on Info. Theory, IEEE Trans. on Information Theory, 64(3):1945-1956, March 2018.

23. **K. Banawan** and S. Ulukus, MIMO Wiretap Channel under Receiver Side Power Constraints with Applications to Wireless Power Transfer and Cognitive Radio, IEEE Trans. on Communications, 64(9):3872-3885, September 2016.

- **Conference Papers**

Published Conference Papers

1. S. ul Zuhra, M. Seif, **K. Banawan**, H. Poor, Random Orthogonalization for Private and Secure Wireless Federated Learning, Asilomar Conference on Signals, Systems, and Computers, Pacific Grove, accepted.

2. M. Yonan, M. Khafagy, **K. Banawan** and K. Seddik, Joint Beamforming and Metasurface Reflection: A Lightweight Design for Energy Efficiency via Deep Reinforcement Learning, 2023 IEEE Vehicular Technology Conference (VTC-Spring), Florence, Italy, June 2023.

3. A. Arafa and **K. Banawan**, Private Status Updating with Erasures: A Case for Retransmission Without Resampling, IEEE International Conference on Communications (ICC), Rome, Italy, May 2023.

4. **K. Banawan**, A. Arafa and K. G. Seddik, Timely Multi-Process Estimation with Erasures, Asilomar Conference on Signals, Systems, and Computers, Pacific Grove, CA, USA, October 2022.

5. M. Aboelwafa, G. Alsuhli, **K. Banawan**, and K. Seddik, Self-Optimization of Cellular Networks Using Deep Reinforcement Learning with Hybrid Action Space, IEEE Consumer Communications and Networking (CCNC), January 2022.

6. S. Samy, **K. Banawan**, M. Azab and M. Rizk, Smart Blockchain-based Control-data Protection Framework for Trustworthy Smart Grid Operations, IEEE 12th Annual Information Technology, Electronics and Mobile Communication Conference (IEMCON), October 2021.

7. **K. Banawan**, A. Arafa, and S. Ulukus, Timely Private Information Retrieval, IEEE International Symposium on Information Theory, Melbourne, Australia, July 2021.

8. S. Vithana, **K. Banawan**, and S. Ulukus, Semantic Private Information Retrieval From MDS-Coded Databases, IEEE International Symposium on Information Theory, Melbourne, Australia, July 2021.

9. Z. Wang, **K. Banawan**, and S. Ulukus, An Information-Theoretic Scheme for Multi-Party Private Set Intersection, IEEE International Symposium on Information Theory, Melbourne, Australia, July 2021.

10. B. Herren, A. Arafa, and **K. Banawan**, "Download Cost of Private Updating", IEEE International Conference on Communications, Montreal, Canada, June 2021.

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

12. S. Vithana, **K. Banawan**, S. Ulukus, Semantic Private Information Retrieval: Effects of Heterogeneous Message Sizes and Popularities, IEEE Global Communications Conference (Globecom), Taipei, Taiwan, December 2020.

13. S. Abd El Aziz, **K. Banawan**, and M. Alghoniemy, "Bounded-Error Subset Selection for Sparse Channel Estimation," 2020 30th International Conference on Computer Theory and Applications (ICCTA), Alexandria, Egypt, December 2020

14. Z. Wang, **K. Banawan**, S. Ulukus, Private Set Intersection Using Multi-Message Symmetric Private Information Retrieval, IEEE International Symposium on Information Theory, Los Angeles, USA, June 2020.

15. A. Arafa, **K. Banawan**, K. G. Seddik, and H. V. Poor, Timely Estimation Using Coded Quantized Samples, IEEE International Symposium on Information Theory, Los Angeles, USA, June 2020.

16. W. Al-Amiri, M. Baza, **K. Banawan**, M. Mahmoud, W. Alasmary and K. Akkaya, Towards Secure Smart Parking System Using Blockchain Technology, IEEE Consumer Communications and Networking Conference, Las Vegas, USA, January 2020.

17. K. M. Attiah, **K. Banawan**, A. Gaber, A. Elezabi, K. G. Seddik, Y. Gadallah, K. Abdullah, Load Balancing in Cellular Networks: A Reinforcement Learning Approach, IEEE Consumer Communications and Networking Conference, Las Vegas, USA, January 2020.

18. W. Al-Amiri, M. Baza, **K. Banawan**, M. Mahmoud, W. Alasmary and K. Akkaya, Privacy-Preserving Smart Parking System Using Blockchain and Private Information Retrieval, IEEE International Conference on Smart Applications, Communications and Networking, Sharm El-Sheikh, December 2019.

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

20. **K. Banawan**, B. Arasli and S. Ulukus, Improved Storage for Efficient Private Information Retrieval, IEEE Information Theory Workshop, Visby, Gotland, Sweden, August 2019.

21. **K. Banawan** and S. Ulukus, Private Information Retrieval from Non-Replicated Databases, IEEE International Symposium on Information Theory, Paris, France, July 2019.

22. **K. Banawan**, B. Arasli, Y.-P. Wei and S. Ulukus, Private Information Retrieval from Heterogeneous Uncoded Caching Databases, IEEE International Symposium on Information Theory, Paris, France, July 2019.

23. Y.-P. Wei, B. Arasli, **K. Banawan** and S. Ulukus, Private Information Retrieval from Decentralized Uncoded Caching Databases, IEEE International Symposium on Information Theory, Paris, France, July 2019.

24. **K. Banawan** and S. Ulukus, Private Information Retrieval from Multiple Access Channels, IEEE Information Theory Workshop, Guangzhou, China, November 2018.

25. **K. Banawan** and S. Ulukus, Noisy Private Information Retrieval, 52nd Asilomar Conference on Signals, Systems and Computers, Pacific Grove, CA, October 2018.

26. Y.-P. Wei, **K. Banawan** and S. Ulukus, Cache-Aided Private Information Retrieval with Unknown and Uncoded Prefetching, IEEE International Symposium on Information Theory, Vail, CO, June 2018.

27. **K. Banawan** and S. Ulukus, Private Information Retrieval Through Wiretap Channel II, IEEE International Symposium on Information Theory, Vail, CO, June 2018.

28. **K. Banawan** and S. Ulukus, Private Information Retrieval Under Asymmetric Traffic Constraints, IEEE International Symposium on Information Theory, Vail, CO, June 2018.

29. Y.-P. Wei, **K. Banawan** and S. Ulukus, Cache-Aided Private Information Retrieval with Partially Known Uncoded Prefetching, IEEE International Conference on Communications, Kansas City, MO, May 2018.

30. Y.-P. Wei, **K. Banawan** and S. Ulukus, Private Information Retrieval with Partially Known Private Side Information, Conference on Information Sciences and Systems, Princeton, NJ, March 2018.

31. **K. Banawan**, and S. Ulukus, Private Information Retrieval from Byzantine and Colluding Databases, 55th Annual Allerton Conference on Communications, Control and Computing, Monticello, IL, October 2017.

32. **K. Banawan**, and S. Ulukus, Multi-Message Private Information Retrieval, IEEE International Symposium on Information Theory, Aachen, Germany, July 2017.

33. **K. Banawan**, and S. Ulukus, Private Information Retrieval from Coded Databases, IEEE International Conference on Communications, Paris, France, May 2017.

34. **K. Banawan**, S. Ulukus, P. Wang and B. Henz, Secure Rates in Multiband Broadcast Channels with Combating Jammers, IEEE Military Communication Conference, Baltimore, MD, November 2016.

35. **K. Banawan** and S. Ulukus, Secrecy in Broadcast Channel with Combating Helpers and Interference Channel with Selfish Users, IEEE International Symposium on Information Theory, Barcelona, Spain, July 2016.

36. **K. Banawan** and S. Ulukus, Achievable Secrecy Rates in the Multiple Access Wiretap Channel with Deviating Users, IEEE International Symposium on Information Theory, Barcelona, Spain, July 2016.

37. **K. Banawan**, S. Ulukus, P. Wang and B. Henz, Multiband Jamming Strategies with Minimum Rate Constraints, IEEE Wireless Communications and Networking Conference, Doha, Qatar, April 2016.

38. **K. Banawan** and S. Ulukus, Secure Degrees of Freedom of the Gaussian MIMO Interference Channel, 49th Asilomar Conference on Signals, Systems and Computers, Pacific Grove, CA, November 2015.

39. **K. Banawan** and S. Ulukus, Gaussian MIMO Wiretap Channel under Receiver Side Power Constraints, 52nd Annual Allerton Conference on Communications, Control and Computing, Monticello, IL, October 2014.

40. **K. A. Banawan** and E. Sourour, Turbo equalization of precoded collaborative MIMO for the uplink of LTE-advanced, International Conference on Computing, Networking and Communications (ICNC 2013), Jan. 2013.

41. **K. A. Banawan** and E. Sourour, Combined Collaborative and Precoded MIMO for Uplink of the LTE-Advanced, The 29th National Radio Science Conference (NRSC 2012), April 2012.

42. **K. A. Banawan** and E. Sourour, Enhanced SIC and Initial Guess ML Receivers for Collaborative MIMO of the LTE Uplink, IEEE Vehicular Technology Conference (VTC Fall 2011), Sept. 2011.