

Fatemeh Afghah, Ph.D.

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Research Interests

Decentralized Decision Making in Multi-Agent Systems, Wireless Communication Systems, Biomedical Signal Processing, Computer-aided Medical Decision Making, Security and Trust Management in Autonomous Systems, Game Theory Optimization, Machine Learning, Radio Spectrum Sharing.

Appointments

- Aug. 2015-present, Assistant Professor, School of Informatics, Computing and Cyber Systems, Northern Arizona University.
- June 2017-August 2017, Visiting Faculty at Air Force Research Laboratory, Rome, NY.
- July 2016-August 2016, Visiting Faculty at Air Force Research Laboratory, Rome, NY.
- Nov. 2015-present, Affiliated Faculty, Partnership for Native American Cancer Prevention (NACP), Arizona Cancer Center, Northern Arizona University.
- Aug. 2013-Aug. 2015, Assistant Professor (tenure-track), Electrical & Computer Engineering Department, North Carolina A&T State University.
- November. 2013-Present, Director of Wireless Networking and Information Processing (WiNIP) Laboratory.
- 2009-2013, Research Assistant, Electrical & Computer Engineering Department, University of Maine.

Educational Profile

- 2009-2013: Ph.D. in Electrical & Computer Engineering
University of Maine, Orono, ME USA.
- 2012-2013: Graduate Visitor Student in Electrical & Computer Engineering
University of Maryland, College Park, MD, USA.
- 2005-2008: M.Sc. in Electrical Engineering
Khajeh Nassir Toosi University of Technology (KNTU), Tehran, Iran
- 2001-2005: B.Sc. in Electrical Engineering
Khajeh Nassir Toosi University of Technology (KNTU), Tehran, Iran

Honors & Awards

- IEEE Senior Member, Feb. 2019.
- **Best paper**, IEEE INFOCOM, Workshop on Wireless Sensor, Robot and UAV Networks (WiSARN), 2018.
- Nominated as Exemplary Performer for AY16-17 by School of Informatics, Computing, and Cyber Systems Faculty Status Committee
- **Visiting Faculty Research Program Award**, Air Force Research Laboratory, 2017.
- **NSF CISE Research Initiation Initiative (NSF-CRII) Award**, National Science Foundation, 2017.
- Recognized as **Educator of Influence** by a Gold Axe Ward Candidate, 2017.
- **Visiting Faculty Research Program Award**, Air Force Research Laboratory, 2016.
- **New Investigator Award, NASA/North Carolina Space Grant**, March 2014.
- **Selected paper Recognition, National Wireless Research Collaboration Symposium (NWRCS)**, May 2014.
- **N2Women Young Researcher Fellowship**, ACM and IEEE Communication Society, 2013.
- NSF Travel Grant, National Wireless Research Collaboration Symposium (NWRCS), May 2014.
- **Maine Economic Improvement Fund (MEIF) Doctoral Fellowship Award**, University of Maine, 2012-2013.
- **Summer Dissertation Fellowship**, University of Maine, 2013.
- **Graduate Student Government Research Grant**, University of Maine, 2013.
- **Certificate of Excellence in Teaching and Assessment**, University of Maine, 2012.
- **Granted Fellowship** by International Telecommunication Union (ITU), ITU TELECOM AFRICA'08, Cairo, 2008.
- **First rank** in Masters degree, Communication Engineering Dept., K.N. Toosi University of Technology, 2008.
- **Elite Student Award** in M.Sc, K.N. Toosi University of Technology, 2008.
- **ITU's Youth Representative** in Global Forum on Youth and ICT for Development, Geneva, Sep. 2007.
- **ITU's Youth Forum Alumni**, International Telecommunication Union (ITU) TELECOM World 2006, Hong Kong, 2006.
- **Elite Student Award** in B.Sc, K.N. Toosi University of Technology, 2005.

Funded Projects

19. Title: *INTERN Supplement for PFI-RP: Design and Fabrication of Hardware-based Security Platform using Fabrication Variability of Ultra low Power Memories*, Funding Agency: **National Science Foundation**
Amount: \$53,351,
Role: PI, September 2019- August 2021.

18. Title: *Cooperative Dynamic Spectrum Sharing in Heterogeneous Autonomous Communication Systems*,
Funding Agency: **Air Force Research Laboratory**
Amount: \$25,000,
Role: Sole PI, Jan. 2019-Dec. 2019.
17. Title: *PFI-RP: Design and Fabrication of Hardware-based Security Platform using Fabrication Variability of Ultra low Power Memories*,
Funding Agency: **National Science Foundation**
Amount: \$749,996,
Role: PI, September 2018- August 2021.
16. Title: *A Signal Processing Framework for Early Prediction of AFib for Rural Population*,
Funding Agency: **NIH Southwest Health Equity Research Collaborative (SHERC) Center at NAU**
Amount: \$60,000 (direct cost),
Role: PI, January 2019- January 2021.
15. Title: *Dynamic Spectrum Leasing in Heterogeneous Unmanned Aerial Vehicle Networks*,
Funding Agency: **Air Force Research Laboratory**
Amount: \$129,000,
Role: Sole PI, Jan. 2018-Dec. 2018.
14. Title: *Research Experience for Undergraduate (REU) Supplement for CRII: SCH: A Computational Framework to False Alarm Suppression in Intensive Care Units*,
Funding Agency: **National Science Foundation**,
Amount: \$16,000,
Role: Sole PI, August. 2018-Feb. 2019.
13. Title: *Phase II: Exploiting Nanomaterials for end-to-end Cybersecurity Solutions*,
Funding Agency: **Arizona Board of Regents**,
Amount: \$500,000 (total direct cost),
Role: Co-PI, (PI: Dr. Cambou), July 2017-December 2018.
12. Title: *A Computational Framework to False Alarm Suppression in Intensive Care Units*,
Funding Agency: **National Science Foundation, CISE Research Initiation Initiative (NSF-CRII) Award**,
Amount: \$175,000,
Role: Sole PI, 2017-2019.
11. *An Adaptive Game-theoretic Framework for Secure Spectrum Sharing*,
Funding Agency: **Air Force Research Laboratory**,
Amount: \$15,930.00, Role: Sole PI, 2017. (Completed)
10. Title: *Phase I: Exploiting Nanomaterials for end-to-end Cybersecurity Solutions*,
Funding Agency: **Arizona Board of Regents**,
Amount: \$500,000 (total direct cost),
Role: Co-PI, (PI: Dr. Cambou), June 2016-December 2017. (Completed)
9. Title: *Distributed Task coordination and Resource Allocation in Heterogeneous Autonomous Airborne Networks*,
Funding Agency: **Air Force Research Laboratory (AFRL)**, Faculty Summer Fellowship,
Amount: \$16,000. Role: Sole-PI, July 2016-August 2016. (Completed)
8. Title: *Development of Internet of Things (IoT) Research Infrastructure Center*,
Funding Agency: Northern Arizona University Research Development Grants,

- Amount: \$50,000,
 Role: Co-PI, (PI: Dr. Flikkema), Oct. 2015- Oct. 2016. (Completed)
7. Title: *Testing, Evaluation and Control of Heterogeneous Large-scale Autonomous Vehicles (TECHLAV)*,
 Funding Agency: **DoD Center of Autonomy, Air Force Research Laboratory (AFRL)**,
 Amount:\$5,000,000,
 Role: Co-PI (Thrust Lead), (PI: Dr. Homaifar) (2015-2020) (Not active)
 6. Title: *Inter-satellite Communications in Autonomous Small Satellite Networks*,
 Funding Agency: North Carolina Space Grant Consortium, **New Investigator Program**,
 Amount: \$15,000,
 Role: Sole PI, March 2013- February 2014. (Completed)
 5. Title: *Digital Signal Processing Research and Educational Laboratory*,
 Funding Agency: Title III funding, North Carolina A&T State University,
 Amount: \$104,000,
 Role: Sole PI, March 2015. (Completed)
 4. Title: *Develop a Small Satellite Network using Software Defined Radio*,
 Funding Source: College of Engineering Research Equipment Funding, North Carolina A&T State University,
 Amount: \$94,000,
 Role: Co-PI, (PI: Dr. Edmonson), October 2013. (Completed)
 3. Title: *Autonomous cooperative control and coordination of heterogeneous multi-agent systems*,
 Funding Source: College of Engineering Research Equipment Funding, North Carolina A&T State University,
 Amount: \$96,140,
 Role: Co-PI, (PI: Dr. Karimodini), October 2013. (Completed)
 2. Title: *Assistive robot for geriatric and handicap application*,
 Funding Source: College of Engineering Research Equipment Funding, North Carolina A&T State University,
 Amount: \$100,176,
 Role: Co-PI, (PI: Dr Homaifar), October 2013. (Completed)
 1. Title: *Game theoretical optimization in cooperative communications networks*,
 Funding Source: Maine Economic Improvement Fund (MEIF) Doctoral Fellowship,
 Amount: \$18,000,
 Role: Sole PI, 2013. (Completed)

Book Chapters

4. F. Afghah, A. Shamsoshoara, Laurent Njilla, Charles Kamhoua, "Trust Management in IoT networks",
 Book title: "Modeling and Design of Secure Internet of Things",
 Book Editors: Charles Kamhoua, Laurent Njilla, Alexander Kott, Sachin Shetty,
John Wiley, ISBN: 1119593360, March 2020..
3. C. Osiegbu, S. B. Amsalu, F. Afghah, D. Limbrick, A. Homaifar, "Toward Resident Behavior Prediction in Wireless Sensor Network- Based Smart Homes",
 Book title: *Advances in Computer Communications and Networks, From Green, Mobile, Pervasive Networking to Big Data Computing*, Chapter 12, pp.345-363

Editors: Kewei Sha, Aaron Striegel, Min Song, River Publishers, Series in Communications, ISBN: 978-87-93379-87-9, February 2017.

2. A. Abedi, F. Afghah, A. Razi, "Resource Management in Cyber Physical Systems", *Book title: Cyber-Physical System Design with Sensor Networking Technologies*, Chapter 8

Editors: Sherali Zeadally, Naffa Jabeur, Publisher: IET(The Institution of Engineering and Technology), ISBN: 978-1849198240, 2016.

1. Collaborating in two chapters, A. Ghassemi, A. Abedi, F. Ghassemi, "Propagation Engineering in Wireless Communications", Springer, August 2011, 451 Pages, ISBN: 1461410762.

Patents & Invention Disclosures

6. F. Afghah, A. Razi, A. Belle, and K. Najarian, "Hierarchical Game-theoretic Based Feature Selection in Heterogeneous Big Data Sets", Invention Disclosure, Collaborative among NC A&T State University, Duke University and University of Michigan, Ann Arbor, September 19, 2014.

NC A&T State University Reference Number: EN00840714, Duke University Reference Number: IDF#4435.

5. F. Afghah, B. Cambou, "PUF with Multi-states and Machine Learning", Filed Patent, US 2017/0141929 A1.
4. F. Afghah, A. Razi, K. Najarian, "False Alarm Suppression in Intensive Care Units", Invention disclosure, Disclosure ID: D2017-0025, Case number: 2017-040, September 2017.
3. F. Afghah, A. Razi, K. Najarian, "Roulette Transform for Signal Processing", Invention disclosure, Disclosure ID: D2018-007, January 2018.
2. F. Afghah, E. Bentley, "Cooperative Target Execution System for Unmanned Aerial Vehicle Networks", Filed by AFRL, Sep. 2018.
1. F. Afghah, S. Mousavi, "Patient ECG Heartbeat Classification and Analysis for Arrhythmia Detection", U.S. Provisional Pat. App. No. 62801881, filed February 6, 2019.

Under Review Papers

1. S. Mousavi, A. Fotoohinasab, F. Afghah, Single-modal and multi-modal False Arrhythmia Alarm Reduction using Attention-based Convolutional and Recurrent Neural Networks, submitted to IEEE Journal of Biomedical and Health Informatics (IEEE BHI), 2019.
2. B. Ghazanfari, F. Afghah, M. Hagiaghayy, Inverse Feature Learning: Feature learning based on Representation Learning of Error, submitted to Thirty-third Annual Conference on Neural Information Processing Systems (NIPS), 2019.
3. M. M. Hamidi, W. W. Edmonson, and F. Afghah, "Stackelberg Game Model for Power Allocation in Small Satellites Networks", submitted to IEEE Journal on Miniaturization for Air and Space Systems (J-MASS), 2019.
4. A. Korenda, A. Shamsoshoara, A. Afghah, S. Zeadally, "A Survey on Hardware-based Security Mechanisms for Internet of Things", submitted to ACM Computing Surveys, 2019.

20. B. Ghazanfari, F. Afghah, M. Taylor, "Autonomous Extraction of a Hierarchical Structure of Tasks in Reinforcement Learning, A Sequential Associate Rule Mining Approach", *IEEE Access*, 2019.
19. A. Balasubramaniam, A. Paul, A. Daniel, F. Afghah, "Combined Dense Urban Traffic Surveillance, Road-Traffic Accident Analysis and Principal Component Analysis for ITS in Smart-City based Environments", *Journal of Intelligent Transportation Systems: Technology, Planning, and Operations*, 2019.
18. S. Mousavi, F. Afghah, and R. Acharya, "SleepEEGNet: Automated Sleep Stage Scoring with Sequence to Sequence Deep Learning Approach", **PLoS ONE**, 2019.
17. Jacob Chakareski, Syed Naqvi, Nicholas Mastrorarde, Jie Xu, Fatemeh Afghah, Abolfazl Razi, "An Energy Efficient Framework for UAV-Assisted Millimeter Wave 5G Heterogeneous Cellular Networks", **IEEE Transactions on Green Communications and Networking**, vol. 1, no. 1, pp. 37-44, 2019.
16. M. Zaeri Amirani, F. Afghah, S. Zeadally, "A Hierarchical Spectrum Access Scheme for TV White Space Coexistence in Heterogeneous Networks", **IEEE Access**, vol. 6, no. 1, pp. 78992-79004, December 2018.
15. Sajad Mousavi, Fatemeh Afghah, Jonathan Ashdown, Kurt Turck, "Use of A Quantum Genetic Algorithm for Coalition Formation in Large-scale UAV Networks", **Elsevier Ad Hoc Networks Journal**, vol. 87, pp. 26-36, May 2019.
14. H. Peng, A. Razi, F. Afghah, J. Ashdown, "A Unified Framework for Joint Mobility Prediction and Object Profiling of Internet of Things with Flying Nodes", to appear in **Journal of Communications and Networks (JCN)**, Special Issue on Amateur Drone and UAV Communications and Networks, 2018.
13. M. Zaeri Amirani, F. Afghah, J. Ashdown, "Optimal Relaying Beamforming in MABC Bidirectional Cognitive Radio Networks in Presence of Interferers", to appear in **Springer International Journal of Wireless Information Networks**, Volume 25, Issue 4, pp 383-398, December 2018.
12. D. Amanor, W. Edmonson and F. Afghah, "Inter-Satellite Communication System based on Visible Light", **IEEE Transactions on Aerospace and Electronic Systems**, vol. 54 , no. 6, pp. 2888-2899, 2018.
11. F. Afghah, A. Razi, R. Soroushmehr, H. Ghanbari, K. Najarian, "Game Theory for Systematic Selection of Wavelet-based Features; Application in False Alarm Detection in Intensive Care Units", **Entropy**, Special Issue on Information Theory in Game Theory, vol. 20, no. 3:190, doi:10.3390/e20030190, 2018.
10. Fatemeh Afghah, Bertrand Cambou, Masih Abedini, and Sherali Zeadali, "A Resistive Random Access Memory Physically Unclonable Functions (ReRAM PUF)-based Approach to Enhance Authentication Security in Software Defined Wireless Networks", **Springer International Journal of Wireless Information Networks** , vol. 52, no. 2, pp. 117-129, 2018. DOI: 10.1007/s10776-018-0391-6.
9. M. Baidas, M. Afghah, and F. Afghah, "Distributed Simultaneous Wireless Information and Power Transfer in Multi-User Amplify-and-Forward Ad-Hoc Wireless Networks", **International Journal of Communication Systems**, John Wiley, vol. 31, no. 1, DOI: 10.1002/dac.3411, 2017.
8. R. Radhakrishnan, W. Edmonson, F. Afghah, F. Pinto, R. Martinez Rodriguez-Osorio, and S. Burleigh, "Survey of Inter-satellite Communication for Small Satellite Systems:

An OSI Framework Approach", **IEEE Communications Surveys and Tutorials**, vol. 18, no. 4, pp. 2442-2473, 2016. **impact factor 20.23**

7. A. Razi, F. Afghah, and V. Varadan, "Network-based Enriched Gene Subnetwork Identification: A Game Theoretic Approach", **Biomedical Engineering and Computational Biology Journal**, vol. 2, pp. 1-14, 2016. (Pubmed 2016: 27081328)
 6. A. Razi, F. Afghah, A. Abedi, "Channel-Adaptive Packetization Policy for Minimal Latency and Maximal Energy Efficiency", **IEEE Transactions on Wireless Communications**, vol. 15, no 3, pp. 2407-2420, 2016.
 5. F. Afghah, A. Razi, "Game Theoretic Study of Cooperative Spectrum Leasing in Cognitive Radio Networks," *International Journal of Handheld Computing Research (IJHCR)*, vol. 5, no. 2, pp. 61-74, Jun. 2014. **(Invited Paper)**
 4. A. Razi, F. Afghah, A. Abedi, "Power Optimized DSTBC Assisted DMF Relaying in Wireless Sensor Networks with Redundant Super nodes", **IEEE Transactions on Wireless Communications**, vol. 12, no. 2, pp. 635-645, Feb. 2013.
 3. F. Afghah, A. Razi, A. Abedi, "Stochastic Game Theoretical model for Packet Forwarding in Relay Networks", **Springer Telecommunication Systems journal, Special Issue on Mobile Computing and Networking Technologies**, vol. 52, no. 4, pp. 1877-1893, 2013.
 2. A. Razi, F. Afghah, A. Abedi, "Binary Source Estimation Using a Two-tiered Wireless Sensor Network," *IEEE Communication letters*, vol. 15, no. 4, pp. 449-451, Apr. 2011.
 1. F. Afghah, A. Razi, M. Ardebilipour, "Fast Turbo Codes Concatenated with Space-Time Block Codes", *ISI Journal of Applied Science*, vol. 8, no. 16, pp. 2867-2873, 2008.
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51. S. Islam, F. Afghah, A. Razi, "Fire Frontline Monitoring by Enabling UAV-Based Virtual Reality with Adaptive Imaging Rate", IEEE Asilomar Conference on Signals, Systems, and Computers, 2019.
 50. A. Korenda, F. Afghah, B. Cambou, C. Philabaum, "A Proof of Concept SRAM-based Physically Unclonable Function (PUF) Key Generation Mechanism for IoT Devices", IEEE SECON Workshop on Security Trust and Privacy in Emerging Cyber-Physical Systems, June 2019.
 49. A. Shamsoshoara, M. Khaledi, F. Afghah, A. Razi, J. Ashdown, K. Turck, "A Solution for Dynamic Spectrum Management in Mission-Critical UAV Networks", IEEE SECON Workshop on Networks of Autonomous Vehicles, Robots, Sensors (IAUV 2019), June 2019.
 48. B. Ghazanfari, F. Afghah, K. Najarian, S. Mousavi, J. Gryak, and J. Todd, "An Unsupervised Feature Learning Approach to Reduce False Alarm Rate in ICUs", *40th International Conference of the IEEE Engineering in Medicine and Biology Society, (EMBC'19)* 2019.
 47. S. Mousavi, F. Afghah, A. Razi, R. Acharya, "ECGNET: Learning Where to Attend for Detection of Paroxysmal Atrial Fibrillation with Deep Visual Attention", IEEE-EMBS International Conferences on Biomedical and Health Informatics **(BHI'19)**, May 2019.
 46. J. Cheng, A. Valehi, A. Afghah, A. Razi, "A Deviation Analysis Framework for ECG Signals Using Controlled Spatial Transformation", IEEE-EMBS International Conferences on Biomedical and Health Informatics **(BHI'19)**, May 2019.

**Peer
Reviewed
Conference
Papers**

45. S. Mousavi, F. Afghah, "Inter- and Intra-patient ECG Heartbeat Classification for Arrhythmia Detection: A Sequence to Sequence Deep Learning Approach", International Conference on Acoustics, Speech, and Signal Processing (**ICASSP'19**), May 2019.
44. F. Afghah, A. Razi, J. Chakareski, J. Ashdown, "Wildfire Monitoring in Remote Areas using Autonomous Unmanned Aerial Vehicles", **IEEE INFOCOM**, Workshop on Mission-Oriented Wireless Sensor, UAV and Robot Networking, April 2019.
43. M. Baidas, M. Afghah, and F. Afghah, "A Matching-Theoretic Approach to Distributed SWIPT in Ad-Hoc Wireless Networks", *IEEE International Symposium on Networks, Computers and Communications (ISNCC)*, July 2019.
42. A. Shamsoshoara, M. Khaledi, F. Afghah, A. Razi, J. Ashdown, "Distributed Cooperative Spectrum Sharing in UAV Networks Using Multi-Agent Reinforcement Learning", IEEE Consumer Communications & Networking Conference (**CCNC'19**), Jan. 2019.
41. A. Rovira-Sugranes F. Afghah, A. Razi, "Optimized Compression Policy for Flying Ad hoc Networks", IEEE Consumer Communications & Networking Conference (**CCNC'19**), Jan. 2019.
40. M. Moshassem Hamidi, F. Afghah, W. Edmonson, "A Stackelberg Game-theoretic Model for Interference Management in Inter-satellite Communication Networks", *2018 IEEE International Conference on Wireless for Space and Extreme Environments (WiSEE'18)*, December 2018.
39. M. Khaledi, A. Rovira-Sugranes, F. Afghah, and A. Razi, "On Greedy Routing in Dynamic UAV Networks", IEEE International Conference on Sensing, Communication and Networking (**SECON'18**), Workshop on Communications, Data Processing and Control for Unmanned Autonomous Systems (CPC-UAV), June 2018.
38. M. Zaeri-Amirani, F. Afghah, S. Mousavi, "A Feature Selection Method Based on Shapley Value to False Alarm Reduction in ICUs, A Genetic-Algorithm Approach", 40th Annual International Conference of the IEEE Engineering in Medicine and Biology Society (**EMBC'18**), July 2018.
37. A. Korenda, F. Afghah, B. Cambou, "'A Secret Key Generation Scheme for Internet of Things using Ternary-States ReRAM-based Physical Unclonable Functions", International Wireless Communications and Mobile Computing Conference (IWCMC 2018), June 2018.
36. F. Afghah, A. Shamsoshoara, L. Njilla, and C. Kamboua, "A Reputation-based Stackelberg Game Model to Enhance Secrecy Rate in Spectrum Leasing to Selfish IoT Devices", **INFOCOM**, Workshop on Advances in Software Defined and Context-aware Cognitive Networks (IEEE SCAN), Honolulu, HI, April 2018.
35. S. Mousavi, F. Afghah, J. Ashdown, K. Truck, "Leader-follower based Coalition Formation in Large-scale UAV Networks, A Quantum Evolutionary Approach", **INFOCOM** Wireless Sensor, Robot and UAV Networks Workshop (WiSARN), Honolulu, HI, April 2018.
34. F. Afghah, M. Zaeri Amirani, A. Razi, J. Chakareski, and E. Bentley, "A Coalition Formation Approach to Coordinated Task Allocation in Heterogeneous UAV Networks", *IEEE American Control Conference (ACC'18)*, Milwaukee, USA, 2018.
33. S. Naqvi, J. Chakareski, N. Mastrorade, J. Xu, F. Afghah, A. Razi, "Energy Efficiency Analysis of UAV-Assisted mmWave HetNets", IEEE International Communications Conference (**ICC'18**), Kansas City, USA, 2018.

32. A. Razi, and F. Afghah, J. Chakareski, "Optimal Measurement Policy for Predicting UAV Network Topology", *51th Asilomar Conference on Signals, Systems and Computers (Asilomar'17)*, Nov 2017.
31. Milad Moghassem Hamidi, William Edmonson, and Fatemeh Afghah, "A Non-cooperative Game Theoretic Approach for Power Allocation in Intersatellite Communication", *2017 IEEE International Conference on Wireless for Space and Extreme Environments (WiSEE'17)*, Montreal, Oct. 2017.
30. David Amanor, William Edmonson, and Fatemeh Afghah, "Link Performance Improvement via Design Variables Optimization in LED-Based VLC-System for Inter-satellite Communication", *2017 IEEE International Conference on Wireless for Space and Extreme Environments (WiSEE'17)*, Montreal, Oct. 2017.
29. Bertrand Cambou, Fatemeh Afghah, Derek Sonderegger, Jennifer Taggart, Hugh Barnaby, and Michael Kozicki, "Ag Conductive Bridge RAMs for Physical Unclonable Functions", *IEEE International Symposium on Hardware Oriented Security and Trust (HOST'17)*, (Poster), McLean, VA, May 2017.
28. Ashwija Korenda, Mohammad Zaeri Amirani and Fatemeh Afghah, "A Hierarchical Stackelberg-Coalition Formation Game Theoretic Framework for Cooperative Spectrum Leasing", *51th Annual Conference on Information Systems and Sciences (CISS'17)*, Mar. 2017.
27. D. Amanor, W. Edmonson, and F. Afghah, "Utility of Light Emitting Diodes for Inter-Satellite Communication in Multi-satellite Networks", *2016 IEEE International Conference on Wireless for Space and Extreme Environments (WiSEE'16)*, Sep. 2016.
26. Bertrand Cambou, Fatemeh Afghah, "Physically Unclonable Functions with multi-states and Machine Learning", *14th International Workshop on Cryptographic Architectures Embedded in Logic Devices (CryptArchi)*, France, Jun. 2016.
25. W. Edmonson, S. Gebreyohannes, A. Dillion, R. Radhakrishnan, A. Esterline and F. Afghah, "Formalizing Inter-Satellite Communication Specification in Small Satellite System", *4S Small Satellite Systems and Services Symposium*, May 2016.
24. F. Afghah, A. Razi, K. Najarian, "A Shapley Value Solution to Game Theoretic-based Feature Reduction in False Alarm Detection", *Workshop on Machine Learning in Healthcare, Neural Information Processing Systems (NIPS)*, 2015.
23. F. Pinto, F. Afghah, R. Radhakrishnan, and W. Edmonson, "Software Defined Radio Implementation of DS-CDMA in Inter-Satellite Communications for Small Satellites", *2015 IEEE International Conference on Wireless for Space and Extreme Environments (WiSEE'15)*, Dec. 2015.
22. F. Afghah, A. Razi, S.M.R. Soroushmehr, S. Molaei, H. Ghanbari, and K. Najarian, "A Game Theoretic Predictive Modeling Approach to Reduction of False Alarm", *2015 International Conference for Smart Health (ICSH'15)*, Lecture Notes in Computer Science, Chapter: Smart Health, vol. 9545, pp 118-130, 2016.
21. N. Namvar, N. Bahadori, F. Afghah, "Context-Aware D2D Peer Selection for Load Distribution in LTE Networks", to appear in *49th Asilomar Conference on Signals, Systems and Computers (Asilomar'15)*, November 2015.
20. A. Razi, F. Afghah, V. Varadan, "Identifying Gene Subnetworks Associated with Clinical Outcome in Ovarian Cancer Using Network Based Coalition Game", *37th Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC'15)*, August 2015.

19. C. Osiegbu, B. Amsalu, F. Afghah, A. Homaifar, and D. Limbrick, "Design and Implementation of an Autonomous Wireless Sensor-based Smart Home", *the 24th International Conference on Computer Communications and Networks (ICCCN'15)*, International Workshop on Wireless Mesh and Ad hoc Networks (WiMAN), Aug. 2015.
18. Seifemichael B. Amsalu, Abdollah Homaifar, Fatemeh Afghah, Saina Ramyar, and Arda Kurt, "Driver Behavior Modeling near Intersections Using Support Vector Machines based on Statistical Feature Extraction", *2015 IEEE Intelligent Vehicles Symposium (IV2015)*, Jul. 2015.
17. N. Namvar, F. Afghah, "Spectrum Sharing in Cooperative Cognitive Radio Networks: A Matching Game Framework", *49th Annual Conference on Information Systems and Sciences (CISS'15)*, Mar. 2015.
16. A. Akbarpour-Kasgari, M. Ardebilipour, F. Afghah, "MIMO-OFDM Non-regenerative Relay Channel Estimation using Compressed Sensing", *49th Annual Conference on Information Systems and Sciences (CISS'15)*, Mar. 2015.
15. W. Edmonson, S. Gebreyohannes, A. Dillion, R. Radhakrishnan, J. Chenou, A. Esterline, and F. Afghah, "Systems Engineering of Inter-Satellite Communications for Distributed Systems of Small Satellites", *9th Annual IEEE International Systems Conference (IEEE SysCon'15)*, pp. 705-710, 2015.
14. A. Razi, F. Afghah, A. Belle, K. Ward and K. Najarian, "Blood Loss Severity Prediction using Game Theoretic Based Feature Selection", *IEEE-EMBS International Conferences on Biomedical and Health Informatics (BHI'14)*, pp. 776 - 780, June 2014.
13. F. Afghah, A. Razi, "Cooperative Spectrum Leasing in Cognitive Radio Networks," *2014 National Wireless Research Collaboration Symposium (NWRCS)*, **Selected Paper**, pp. 106 - 111, May 2014.
12. R. Radhakrishnan, W. Edmonson, F. Afghah, Q. Zhen, J. Chenou, and R. Martinez Rodriguez-Osorio, "Optimal Multiple Access Protocol for Inter-satellite Communication in Small Satellite Systems", *4S Small Satellite Systems and Services Symposium*, May 2014.
11. F. Afghah, A. Razi, A. Abedi, "Power Allocation in Parallel Relay Channels using a Near-Potential Game Theoretical Approach," *48th Annual Conference on Information on Sciences and systems (CISS'14)*, pp. 1-6, Mar. 2014.
10. F. Afghah, M. Costa, A. Razi, A. Abedi, A. Ephremides, "A Reputation-based Stackelberg Game Approach for Spectrum Sharing with Cooperative Cognition," *IEEE Conference on Decision and Control (CDC'13)*, pp. 3287-3292, Dec. 2013.
9. F. Afghah, A. Abedi, "Distributed Fair-Efficient Power Allocation in Two-Hop Relay Networks," *IEEE International Conference on Sensing, Communication, and Networking (SECON'13)*, pp. 255-257, Jun. 2013.
8. A. Abedi, A. Razi, F. Afghah, "Smart Battery-Free Wireless Sensor Networks for Structural Health Monitoring," *International Workshop on Structural Health Monitoring*, Stanford University, CA, Sep. 2011.
7. F. Afghah, A. Razi, A. Abedi, "Throughput Optimization in Relay Networks Using Markovian Game Theory," *IEEE Wireless and Networking Conference (WCNC'11)*, pp. 1080-1085, Cancun, Mexico, Mar. 2011.

6. A. Razi, F. Afghah, A. Abedi, "Hierarchical Network Development of Wireless Passive Sensors," *IEEE International Fly By Wireless Conference (FBW'10)*, pp. 30-31, Orono, ME, Aug. 2010.
5. F. Afghah, A. Razi, A. Abedi, "Wireless Cooperative Relaying Using Game Theory," *IEEE International Fly By Wireless Conference (FBW'10)*, pp. 24-27, Orono, ME, Aug. 2010.
4. F. Afghah, A. Abedi, "Stochastic Game Theoretical Model for Packet Forwarding in Reliable Relay Networks," *International Conference on Wireless Networks (ICWN'10)*, vol. 2, pp. 151-156, Las Vegas, Jul. 2010.
3. A. Razi, F. Afghah, M. Ardebilipour, "Space-Time Block Codes Assisted by Fast Turbo Codes," *4th IEEE International Conference on Wireless Communications, Networking and Mobile Computing (WICOM'08)*, pp. 1-6, Dalian, China, Oct. 2008.
2. F. Afghah, M. Ardebilipour, A. Razi, "Concatenation of Space-Time Block Codes and LDPC Codes", *13th International Telecommunications Network Strategy and Planning Symposium (NETWORK'08)*, pp. 61-66, Budapest, Hungary, Oct. 2008.
1. F. Afghah, M. Ardebilipour, A. Razi, "Fast Turbo Codes with Parallel Decoding Blocks," *16th Iranian Conference Electrical Engineering*, Tarbiat Modares University, Tehran, pp.43-47, May 2008.

Posters

16. F. Afghah, "A Remote Heart Monitoring System for Early Prediction of Atrial Fibrillation for Rural Population", 46th Annual Arizona Rural Health Conference, Organized by the University of Arizona Center for Rural Health, August 2019.
15. N. Payton-McCauslin, A. Grzesiak, J. Todd, F. Afghah, "Multi-Factor Analysis for False Alarm Reduction in Intensive Care Units", 24th Annual College of Engineering, Forestry, and Natural Sciences (UGRADS), April 2018.
14. A. Korenda, F. Afghah, "Secret Key Generation Scheme for IoT Using Ternary States Re-RAM based PUF", Fourth Annual Northern Arizona Science, Technology, Engineering, and Mathematics (STEM) Poster Session, Northern Arizona Planetary Science Alliance, September 2017.
13. N. Namvar, F. Afghah, "Partner Selection in Cooperative Cognitive Radio Networks: A Game Theoretic Analysis", North Carolina A&T State University Annual Graduate Poster Competition, April . 2015.
12. F. Pinto, F. Afghah, W. Edmonson, "Software Defined Radio Implementation of DS-CDMA in Inter-Satellite Communications for Small Satellite", North Carolina A&T State University Annual Graduate Poster Competition, April . 2015.
11. . C. Osiegbu, F. Afghah, "Wireless Sensor Network Based Smart Home", North Carolina A&T State University Annual Graduate Poster Competition, April . 2015.
10. J. Stegall, F. Afghah, "Implementation of an Energy Efficient Android Controlled Smart House", *NSF Emerging Researchers National Conference in STEM (NSF ERN)*, Feb. 2015.
9. J. Stegall, F. Afghah, "Implementation of Smart House with Wireless Sensor Networks", *10th Annual State of North Carolina Undergraduate Research and Creativity Symposium*, Nov. 2014.

8. B. Abou Tchoussou, F. Afghah, "Investigation and Evaluation of Performance Metrics in Dynamic Spectrum Access ", *10th Annual State of North Carolina Undergraduate Research and Creativity Symposium*, Nov. 2014.
7. D. Amanor, F. Afghah, W. Edmonson, "Ground-Based Navigation and Ranging using Ultra-Wideband Signals", *North Carolina A&T State University Graduate Students Poster Competition*, Apr. 2014.
6. R. Radhakrishnan, W. Edmonson, Q. Zeng , F. Afghah, "Optimal Multiple Access Protocol for Inter-Satellite Communication in Small Satellite System", *North Carolina A&T State University Graduate Students Poster Competition*, Apr. 2014.
5. NichelleLe Carrington, Jasmine Gee, Bobby White, Patronia Marshall, Fatemeh Afghah, "H.O.M.E. (Home Out-Patient Monitoring Equipment)", *North Carolina A&T State University Senior Design Poster Competition*, April 2014.
4. B. Abou Tchoussou, F. Afghah, "Cooperative Spectrum Sharing in Cognitive Radio", *9th Annual State of North Carolina Undergraduate Research and Creativity Symposium*, Nov. 2013.
3. F. Afghah, A. Abedi, "Spectrum Sharing in Cognitive Radio Networks with Cooperation", *Graduate Expo, University of Maine*, Mar. 2013.
2. F. Afghah, A. Abedi, "Power Allocation in Relay Networks", *Graduate Expo, University of Maine*, Apr. 2012.
1. F. Afghah, A. Abedi, "Stochastic Game Theoretical Model for Packet Forwarding in Relay Networks", *Graduate Expo, University of Maine*, Apr. 2010.

Thesis

1. **PhD thesis:** Design and Analysis of Cooperative Communications in Wireless Networks Using Game Theory, University of Maine, Aug. 2013.
2. **M.Sc. thesis:** Simulation and Comparison between Turbo Coding and LDPC Coding Concatenated with Space-Time Codes in MIMO Systems, K. N. Toosi University of Technology, Apr. 2008.
3. **B.Sc. thesis:** Simulation and Implementation of Value Added Services in GSM Network, K. N. Toosi University of Technology, Sep. 2005.

Media Coverage

- PUF-based security solution was featured on **NSF Website**, 2018.
<https://www.nsf.gov/eng/iip/pfi/index.jsp>.
- Interview about the PUF-based cybersecurity project with KJZZ radio, "How Secure Are Our Smart Homes? Researchers Work To Protect Devices From Cyberattacks", by Mark Brodie, December 2018.
<https://kjzz.org/content/733390/how-secure-are-our-smart-homes-researchers-work-protect-devices-cyberattacks>
- "Is Your Smart Fridge Spying on You? Electrical Engineers to Lead Development of Next-Gen Cybersecurity Solutions for Internet of Things", Newswise, November 5, 2018.
- False alarm reduction project was featured in **AZ Sun Daily**, 2017.
- False alarm detection project was featured in **KTAR**, 2017.
- Interview published as **Feature Engineer** in *EEWeb Electrical Engineering Community*, 2012.

- Research on Inter-satellite Communications for Small Satellites was featured on Aggie Research, 2014.
- Research on Small Satellites was featured on Aggie Engineering Magazine, Fall 2014.
- The IEEE Communication and Signal Processing Chapter was featured on the Aggie Report, March 2015.

Invited Talks & Presentations

1. Society of Women Engineers Professors Panel Event, Northern Arizona University, November 2018.
2. "Game Theory for Machine Learning; Applications in Detection of Cardiovascular Events", Workshop on Challenges for Using Electronic Health Data for Continuous Monitoring of Cardiac and Pulmonary Disease and Some Potential Solutions, **2018 NSF Connections in Smart Health**, September 2018.
3. "Ethics of Automation and Artificial Intelligence", **Museum of Northern Arizona**, Panelist, September 2018.
4. "Accelerating into the Future", **2018 Flagstaff Festival of Science**, Panelist, September 2018.
5. "Communication Networks", **Flagstaff Summit Middle School**, October 2018.
6. "Applications of Game Theory in Cooperative Communication Networks", Department of Mathematics and Statistics, Northern Arizona University, November 2016.
7. "Small Satellites: Communication, Networks, and Operation", **NAPSA Workshop on Exoplanets and Habitability: Connecting the Very Large to the Very Small**, Lowell Observatory, Flagstaff, AZ, March 2016.
8. "Small Satellite Communications", **North Carolina Museum of Natural Science**, Raleigh, NC, August 2015.
9. "Communication Networks", STAR Charter School, Flagstaff Science Festival, September 2016.
10. "Intersatellite Communications for Small Satellite Networks", **National Institute of Aerospace**, Hampton, VA, September 2014.
11. "Relay Technologies for WiMAX and LTE-Advanced Mobile Systems", **IEEE Special Presentation on WiMAX, University of Maine**, Orono, ME, Nov. 2009.
12. Youth Forum Panelist, **International Telecommunication Union (ITU) TELECOM World**, 2008.

Teaching

1. **Instructor**, Northern Arizona University, (Spring 2019)
Signals and Systems Lecture & Laboratory (EE348) Student Evaluation Rate: 3.46 (out of 4)
2. **Instructor**, Northern Arizona University, (Fall 2018)
Communication Networks (EE430) Student Evaluation Rate: 3.79 (out of 4)
3. **Instructor**, Northern Arizona University, (Spring 2018)
Signals and Systems Lecture & Laboratory (EE348) Student Evaluation Rate: 3.49 (out of 4)

4. **Instructor**, Northern Arizona University, (Fall 2017)
Communication Networks (EE430) Student Evaluation Rate: 3.79 (out of 4)
5. **Instructor**, Northern Arizona University, (Spring 2017)
Signals and Systems & Laboratory (EE348) Student Evaluation Rate: 3.26 (out of 4)
6. **Instructor**, Northern Arizona University, (Fall 2016)
Communication Networks (EE430) Student Evaluation Rate: 3.06 (out of 4)
7. **Advisor**, Northern Arizona University, (Spring 2016, Fall 2016, Spring 2017, Summer 2017, Fall 2017, Spring 2018)
Thesis (EE 699)
8. **Advisor**, Northern Arizona University, (Summer 2018, Fall 2018, Spring 2019)
Thesis (INF 799)
9. **Advisor**, Northern Arizona University, (Fall 2018, Summer 2019)
Independent Study (INF 697)
10. **Advisor**, Northern Arizona University, (Spring 2016, Fall 2016, Spring 2017, Spring 2018, Fall 2018)
Graduate Research (EE 685)
11. **Advisor**, Northern Arizona University, (Spring 2016)
Undergraduate Research (EE 485)
12. **Instructor**, Northern Arizona University, (Spring 2016)
Signals and Systems Lecture & Laboratory (EE348) Student Evaluation Rate: 2.89 (out of 4)
13. **Instructor**, Northern Arizona University, (Fall 2015)
Wireless Communication and Networking (EE434 & EE534) Student Evaluation Rate: 2.63 & 3.55 (out of 4)
14. **Instructor**, North Carolina A&T State University, (Fall 2014)
Advanced Topics in Wireless Communications (ELEN 885)
Student Evaluation Rate: 4.65 (out of 5)
15. **Instructor**, North Carolina A&T State University, (Spring 2014)
Linear Systems and Signals (ELEN 400)
Student Evaluation Rate: 4.33 (out of 5)
16. **Instructor**, North Carolina A&T State University, (Spring 2014)
Wireless Information Networks (ELEN 752)
Student Evaluation Rate: 4.63 (out of 5)
17. **Instructor**, North Carolina A&T State University, (Fall 2013)
Linear Systems and Signals (ELEN 400)
Student Evaluation Rate: 3.88 (out of 5)
18. **Instructor**, North Carolina A&T State University, (Spring 2015)
Wireless Information Networks (ELEN 752) Student Evaluation Rate: 4.31 (out of 5)
19. **Instructor**, North Carolina A&T State University, (Spring 2015)
Linear Systems and Signals (ELEN 400) Student Evaluation Rate: 4.34 (out of 5)
20. **Advisor**, North Carolina A&T State University, (Summer 2014, dual session)
Special Projects (ELEN 686)
21. **Advisor**, North Carolina A&T State University, (Fall'13 & Spring'14)
Senior Design Project I (ELEN 598)

22. **Advisor**, North Carolina A&T State University, (Spring'14 & Fall'14)
Senior Design Project II (ELEN 599)
23. **Teaching Assistant**, University of Maine. (Fall 2011)
Signal and Systems Course
24. **Teaching Assistant**, University of Maine. (Spring 2010)
Introduction to Electrical and Computer Engineering
25. **Mentoring Senior Students**, MERITS Program, Sponsored by Maine Space Grant Consortium & UMaine, Summer 2010 & 2011.
26. **Teaching Assistant**, K. N. Toosi University of Technology, (2006-2008)
Communication Systems Course
Electronic and Circuit Course
27. **Trainer**, K. N. Toosi University of Technology, (2006)
fields including (Mobile Networks, GSM Systems, Spread spectrum)

Visitors

1. Dr. Hui Li, Assistant Professor, (Spring 2014)
Electrical and Computer Engineering Department,
Henan Polytechnic University, China.

**Mentorship-
Postdoctoral
Researchers &
Research
Scientists**

1. Dr. Mehrdad Khaledi, (November 2017-August 2018)
Co-supervised with Dr. Razi,
Now: Visiting Assistant Professor, Department of Mathematics and Computer Science,
Suffolk University, Boston MA
2. Mohammad Zaeri Amirani, (Jan. 2016-August 2016)

**Current Graduate
Students
Supervised**

1. Seyed Sajad Mousavi, PhD Student, start date: August 2017.
2. Alireza Shamsoshoara, PhD Student, start date: August 2017.
3. Mohammad Zaeri Amirani, PhD Student, start date: Fall 2016- Spring 2018.
4. Behzad Ghazanfari, PhD candidate, start date: Jan. 2018.
5. Ashwija Reddy Korenda, PhD student, start date: August 2018.
6. Atiyeh Fotoohinasab, PhD student, start date: August 2018.
7. Sixian Zhang, PhD Student, start date: August 2018.
8. Qian Zhao, MSc Student, start date: August 2018.

Current Undergraduate Students Supervised

1. Orvien James Belen, Undergraduate Research Assistant, Major: Electrical Engineering, April 2019- December 2019.
Project: Prediction of heart arrhythmia using ECG Signals
2. Juan Arias, Undergraduate Research Assistant, Major: Electrical Engineering, August 2019- December 2019.
Project: UAV Communications
3. Sean Tan, Undergraduate Research Assistant, Major: Electrical Engineering, August 2019- December 2019.
Project: Software Defined Communications
4. Gabriel Bixler, Undergraduate Research Assistant, Major: Electrical Engineering, August 2019- December 2019.
Project: Biomedical Signal Processing

Past Students Supervised

Master Students

1. Alireza Shamsoshoara, Master's in Informatics, (August 2017-May 2019)
Now **PhD student at Northern Arizona University** working under my supervision.
2. Syed Sajad Mousavi, Master's in Informatics, (August 2017-December 2018)
Now **PhD student at Northern Arizona University** working under my supervision.
3. Ashwija Reddy Korenda, Master's in Electrical Engineering, (August 2015-May 2018)
Thesis: Enhancing Security and Radio Spectrum Efficiency in Cognitive IoT Networks,
Now **PhD student at Northern Arizona University** working under my supervision.
4. Jared Parks, Master's in Electrical Engineering, (August 2015-January 2017)
Thesis: Hardware Authentication Enhancement of Resistive Random Access Memory (ReRAM) Physical Unclonable Functions.
Now with **Orbital ATK**.
5. Abdullah Shamsudin, Master's in Electrical Engineering, (August 2015-May 2016)
Thesis: Design and Implementation of Software Defined Radio Communication for Unmanned Vehicle Networks.
Now with **Raytheon**.
6. Frank Pinto, Master's in Electrical Engineering, (August 2013-May 2015)
Thesis: Software Defined Radio Implementation of DS-CDMA in Inter-Satellite Communications for Small Satellites.
Now with **Department of Defense**.
7. Christopher Osiegbu, Master's in Electrical Engineering, (August 2013-May 2015)
Thesis: Design and Implementation of an Autonomous Wireless Sensor-based Smart Home
Now with **IBM, Nigeria**.

Undergraduate Students

1. Nathan Payton-McCauslin, Undergraduate Research Assistant supported by NSF REU, (August 2017-December 2018)
Now with **Raytheon**.
2. James Todd, Undergraduate Research Assistant supported by NSF REU, (August 2017-December 2018)
Now with **State Farm**.

3. Arnau Rovria Sugranyes, Undergraduate Research Assistant, Northern Arizona University, Spring 2016.
Now **PhD student at Northern Arizona University.**
4. Boubacar Abou Tchoussou, Undergraduate Research Assistant, North Carolina A&T State University, Fall'13, Spring'14 & Fall'14
Now with **US Patent and Trademark office**, and **MSc at George Mason University.**
5. Jabari Stegall, Undergraduate Research Assistant, North Carolina A&T State University, Fall'14, Spring'15.
Now **PhD student at Worcester Polytechnic Institute.**
6. Rafiya Chowdhury, Undergraduate Research Assistant, North Carolina A&T State University, Spring'15.
7. Denis Yolinga, Undergraduate Research Assistant, North Carolina A&T State University, Spring'15.
8. Reginald Farmer, Undergraduate Research Assistant, North Carolina A&T State University, Spring'15.
9. NichelleLe Carrington, Jasmine Gee, Patronia Marshall, Bobby White, Muhammad Hassan, Emmanuel Arzate, Ayman Aalem, Boubacar Abou Tchoussou, Odetter Bryant (Senior design groups members)

Students Awards

1. Ashwija Korenda, NSF Travel Grant to attend IEEE SECON, June 2019.
2. Ashwija Korenda, iREDEFINE Professional Development Award, March 2019.
3. Boubacar Abou Tchoussou, **College of Art and Sciences Outstanding Undergraduate Student of the Year**, North Carolina A&T State University, 2014-2015.
4. Boubacar Abou Tchoussou, nominated for the **Chancellor Award for Academic Excellence**, North Carolina A&T State University, 2014-2015.
5. Jabari Stegall, NSF travel grant to attend 2015 Emerging Researcher National (ERN) conference, Washington, DC, Feb. 2015.
6. Boubacar Abou Tchoussou, NSF travel grant to attend 2014 Emerging Researcher National (ERN) conference, Washington, DC, Feb. 2014.

Thesis Committee

PhD Committee

1. Radhika Radhakrishnan, North Carolina A&T State University (2013-2016).
Now with Intel.
2. Solomon Gebreyohanne, North Carolina A&T State University (2013-2016).
Now postdoc at NC A&T State University.
3. David Amanor, North Carolina A&T State University (2013-2017).
Now with Intel.
4. Awele Anyanhun, North Carolina A&T State University (2014-2018).
Now with JPL.
5. Milad Hamidi, North Carolina A&T State University (2015-2019).

6. Arnau Rovira-Sugranes, Northern Arizona University (2019-present).
7. Han Peng, Northern Arizona University (2019-present).

Master's Committee

1. Rediet Sebsebie, North Carolina A&T State University (2013-2015)
2. Gabriel Popoola, North Carolina A&T State University (2013-2015)
3. Franklin Suco, North Carolina A&T State University (2013-2015)
4. Ali Valehi, Northern Arizona University (2015-2017)
5. Michael Midelton, Northern Arizona University (2015-2017)
6. Jiaming Chen, Northern Arizona University (2016-2018)

Capstone Teams

1. Team: Data Menders, Northern Arizona University, (Fall 2017-Spring 2018).
Project: Multi-factor Analysis to Reduce False Alarms in Intensive Care Units.
Members: Robert Rasmussen, Nathan Isaac Payton- McCauslin, Alexander John Grzesiak, James Todd.
2. Team: Genius Ones, North Carolina A&T State University, (Fall 2013- Spring 2014).
Project: Home Out-Patient Monitoring Equipment
Members: Jasmine Gee, Bobby White, NichelleLe Carrington, Patronia Marshall.
3. Team: OBEAM, North Carolina A&T State University, (Spring 2014- Fall 2015).
Project: QuickPark (smart parking locating application using wireless sensor networks)
Members: Muhammad Hassan, Odette Bryant, Boubacar Tchoussou, Emmanuel Arzate and Ayman Aalem.

Undergraduate Research Publications & Presentations

1. Jabari Stegall presented a talk at **2015 Emerging Researcher National (ERN) conference**, Washington, DC, Feb. 2015.
2. Boubacar Abou Tchoussou presented a poster presentation at the **2014 State of North Carolina Undergraduate Research and Creativity Symposium (SNCURS)**, Raleigh, NC, Nov. 2014.
3. Jabari Stegall presented a poster presentation at the **2014 State of North Carolina Undergraduate Research and Creativity Symposium (SNCURS)**, Raleigh, NC, Nov. 2013.
4. Boubacar Abou Tchoussou presented a talk at **2014 Emerging Researcher National (ERN) conference**, Washington, DC, Feb. 2014.
5. Boubacar Abou Tchoussou presented a poster presentation at the **2013 State of North Carolina Undergraduate Research and Creativity Symposium (SNCURS)**, Charlotte, NC, Nov. 2013.

Students Internships

- Sajad Mousavi, University of California San Diego, Summer 2019.
- Alireza Shamsoshoara, Next Biometrics, Summer 2018.
- Christopher Osiegbu, IBM, Austin Texas, Summer 2014.
- Frank Pinto, National Security Agency, Summer 2014.
- Boubacar Abou Tchoussou, Virginia Tech University, Summer 2014.
- Jabari Stegall, Cisco, Summer 2014.

Professional Activities

- **Mentoring Co-chair**, Networking Networking Women (*N²Women*) Board, (2019 - 2021).
- **Editorial Board Member**, **IET Wireless Sensor Systems Journal**, (2018-2021).
- **Guest Editor**, Special issue on Vision-based algorithms for information retrieval from the social web, Computational Intelligence Journal, John Wiley, 2019.
- **Mentor at IEEE INFOCOM N2Women Mentoring Event**, April 2018.
- **Faculty Committee Member**, Society of Women Engineers, Northern Arizona University, (2018-2019).
- **Membership Board Standing Committee**, IEEE Signal Processing Society, Chapter Committee Representative of Regions 1-6, (2016-2018).
- **NASA Panelist**, 2017 & 2019.
 - Advanced Information Systems Technology (AIST) Program
 - Small Spacecraft Technology Program
- **NSF Panelist**, 2014, 2015, 2016, 2017, 2018 & 2019.
 - Networking Technology and Systems (NeTS) program
 - Centers of Research Excellence in Science and Technology (CREST) program
 - Wireless Innovation between Finland and the US (WiFiUS) program
 - Partnerships for Innovation (PFI) program
 - Smart Connected Health program
 - BigData Spokes program
 - Cyber Physical Systems (CPS) program
 - Graduate Research Fellowship program
- Career mentoring for high school students, Flagstaff High Scholl Transitions program , 2018.
- **Chair and Organizer IEEE Communications and Signal Processing Joint Societies Chapter**, IEEE Central North Carolina Section, (2014).
- **Advocate Co-chair**, Networking Networking Women (*N²Women*), (2015 - 2016) .
- **GOLD Chair**, IEEE Maine Section. (2010 - 2012)
- **Member-at-Large**, IEEE Maine Section. (2009- 2010)
- Organizing IEEE Maine Section Summer Outing, Portland, ME, Jun. 2010.

- Organizing IEEE Student Transition & Elevation Partnership (STEP) Event, UMaine, May 2011.
- Organizing Committee, IEEE-CANEUS Fly By Wireless Conference, Orono, Aug. 2010.
- Supervisor for undergraduate research assistant students under NSF LSAMP program.
- Serve on Graduate Students Funding Committee, Electrical and Computer Engineering Department, North Carolina A&T State University, (2014- now)
- Organizing IEEE N2Women Event, IEEE SECON'13, New Orleans, Jun. 2013.

Chair & Organizer

- **TPC Chair & Organizer**, the 12th International Workshop on Wireless Sensor, Robot and UAV Networks, in conjunction with by IEEE International Conference on Computer Communications (IEEE INFOCOM), 2019.
- **Co-chair and Organizer**, CPC-UAV: Communications, Data Processing and Control for Unmanned Autonomous Systems Workshop, co-located by IEEE International Conference in Sensing, Communication and Networking (IEEE SECON), 2018.
- Area chair, Workshop for Women in Machine Learning 2019, co-located with 2019 Conference on Neural Information Processing Systems (NIPS).
- **Co-chair and Organizer**, First workshop on Small Satellites, IEEE International Conference on Wireless for Space and Extreme Environments (WiSEE 2018)
- **TCP Co-chair**, IEEE International Conference on Wireless for Space and Extreme Environments (WiSEE 2020)
- **Registration chair**, IEEE International Conference on Wireless for Space and Extreme Environments (WiSEE 2019)

Technical Program Committee:

- IEEE International Symposium on Dynamic Spectrum Access Networks (DySPAN 2019), Newark, NJ.
- 17th IEEE Annual Consumer Communications & Networking Conference (CCNC 2020).
- ACM/IEEE International Conference on Cyber-Physical Systems (ICCPS2020), Zurich, Switzerland.
- Annual IEEE International Symposium on Personal, Indoor and Mobile Radio Communications (PIMRC 2019), Istanbul, Turkey.
- 16th Annual IEEE International Conference on Sensing, Communication and Networking **IEEE SECON 19**, Boston, USA.
- 5th ACM Workshop on Micro Aerial Vehicle Networks, Systems, and Applications (DroNet), ACM International Conference on Mobile Systems, Applications, and Services **ACM MobiSys**, 2019.
- IEEE International Conference on Distributed Computing in Sensor Systems (IEEE DCOSS), Workshop on Wireless Drones over Internet of Things, 2019.
- 1st IEEE WoWMoM Workshop on Wireless Networking, Planning, and Computing for UAV Swarms (SwarmNet 2019), IEEE International Symposium on a World of Wireless, Mobile, and Multimedia Networks (**IEEE WOWMOM**), 2019.

- 12th International Workshop on Wireless Sensor, Robot and UAV Networks, in conjunction with by IEEE International Conference on Computer Communications (IEEE INFOCOM), 2019.
- 16th IEEE Annual Consumer Communications & Networking Conference (CCNC 2019).
- 16th International Conference on Wireless Information Networks and Systems (WINSYS 2019), Prague, Czech Republic.
- Annual IEEE International Symposium on Personal, Indoor and Mobile Radio Communications (PIMRC 2018).
- 27th International Conference on Computer Communications and Networks (ICCCN 2018).
- Annual IEEE International Symposium on Personal, Indoor and Mobile Radio Communications (PIMRC 2017).
- International Conference on Wireless Information Networks and Systems (WINSYS 2017).
- IEEE International Conference on Wireless for Space and Extreme Environments (WiSEE 2016), Germany.
- International Conference on Wireless Information Networks and Systems (WINSYS 2016), Lisbon, Portugal.
- IEEE International Workshop on Wireless Mesh and Ad Hoc Networks (WiMAN 2016), Hawaii 2016 .
- Conference on Information Sciences and Systems (CISS 2015), John Hopkins University, Maryland.
- IEEE International Conference on Wireless for Space and Extreme Environments (WiSEE 2015), Florida.
- International Conference on Wireless Information Networks and Systems (WINSYS 2015), Alsace, France.
- IEEE International Conference on Wireless for Space and Extreme Environments (WiSEE 2014), Noordwijk, The Netherlands.

Judge & Session Chair

- Judge for Poster and Demo Session, IEEE International Conference on Sensing, Communication and Networking **IEEE SECON 19**).
- Session Chair, 49th Asilomar Conference on Signals, Systems and Computers (Asilomar'15).
- Session Chair, 49th Annual Conference on Information Sciences and Systems (CISS 2015), John Hopkins University, Baltimore, Maryland.
- Judge at Annual UnderGraduate Research And Design Symposium (UGRADS), Northern Arizona University, Apr. 2019.
- Judge at Annual UnderGraduate Research And Design Symposium (UGRADS), Northern Arizona University, Apr. 2018.
- Judge at Annual UnderGraduate Research And Design Symposium (UGRADS), Northern Arizona University, Apr. 2017.
- Judge at Annual Senior Design Competition, North Carolina A&T State University, Apr. 2015.

- Judge at 3rd Annual Graduate Research Poster Competition, College of Engineering, North Carolina A&T State University, Apr. 2014.
- Judge at Undergraduate Research and Academic Showcase, UMaine, Apr. 2013.

Reviewer for:

Journals:

- IEEE Journal of Biomedical and Health Informatics,
- BMC Informatics and Decision Making,
- Elsevier Computers & Security Journal,
- IET Communications Journal,
- IEEE Transactions on Communications,
- IEEE Vehicular Technology Magazine,
- IEEE Communications Magazine,
- IEEE Transactions on Vehicular Technology,
- Elsevier Digital Communications and Networks,
- IEEE Transactions of Automatic Control,
- Elsevier Ad Hoc Networks
- Journal of Communications and Networks,
- IEEE Communication Letters,
- Springer Telecommunication Journal,
- Springer International Journal of Wireless Information Networks,

Conferences:

- IEEE International Conference on Computer Communications (INFOCOM),
- IEEE Conference on Decision and Control (CDC),
- International conference on Communications (ICC),
- Global Communications Conference (GLOBECOM),
- IEEE International Symposium on Dynamic Spectrum Access Networks (DySPAN)
- IEEE International Conference in Sensing, Communication and Networking (IEEE SECON),
- International Conference on Computer Communications and Networks (ICCCN)
- IEEE Annual Consumer Communications & Networking Conference (CCNC).
- Annual IEEE International Symposium on Personal, Indoor and Mobile Radio Communications (PIMRC),
- IEEE Annual Consumer Communications & Networking Conference
- Conference on Information Sciences and Systems (CISS),
- IEEE International Conference on Wireless for Space and Extreme Environments (WiSEE),
- International Conference on Telecommunications (ICT),
- Canadian Conference on Electrical and Computer Engineering (CCECE),
- Biennial Symposium on Communications (QBSC),
- International Conference on Computing, Networking and Communication (ICNC),

- International Conference on Cyber-enabled distributed computing and knowledge discovery (CyberC).

Service to Northern Arizona University:

- Search committee for a tenure-track faculty in Electrical Engineering, Spring 2019.
- PhD Program Admission Committee, Electrical Engineering Program, 2019.
- Integrity Board, College of Engineering, Informatics, and Applied Science, August 2018-present.
- Search committee for a tenure-track faculty in Electrical Engineering, Spring 2018.
- Faculty Review Committee, School of Informatics, Computing and Cyber Systems, Fall 2017-Spring 2018.
- Search committee for Electrical Engineering lecturer, Spring 2017.
- Search Committee for Postdoctoral Researcher, Fall 2017.
- Search Committee for Postdoctoral Researcher, Fall 2016.
- Msc student evaluation committee, Spring 2017.
- Search committee, Postdoctoral Researcher, Fall 2016.
- Search committee, Postdoctoral researcher, Fall 2017

Professional Memberships

1. Member of IEEE,
2. Member of IEEE Communication Society,
3. Member of IEEE Signal Processing Society,
4. Member of IEEE Engineering in Medicine and Biology Society (EMBS)
5. Member of Society of Women Engineers,
6. Member of IEEE Women in Engineering,
7. Member of Graduate Women In Science (GWIS),
8. Member of Networking Networking Women (*N²Women*),