

## Fatemeh Afghah, Ph.D.

Associate Professor (tenured),  
Director, Intelligent Systems and Wireless Networking (IS-WiN) Laboratory,  
Electrical and Computer Engineering Department, Clemson University,  
Address: #334, Fluor Daniel Engineering Innovation Building, Clemson, SC 29634  
Phone: 864-656-5913  
Email: [fafghah@clemson.edu](mailto:fafghah@clemson.edu),  
Webpage: Intelligent Systems and Wireless Networking (IS-WiN) Laboratory  
Other pages: [Google Scholar](#), [Linkedin](#)

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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. 2021,-present Associate Professor with Tenure, Electrical and Computer Engineering Department, Clemson University.
- March 2022-June 2025, Faculty Scholar in the Clemson University School of Health Research (CUSHR), Clemson University.
- Aug. 2020,-Aug. 2021 Associate Professor with Tenure, School of Informatics, Computing and Cyber Systems, Northern Arizona University.
- Aug. 2015-Spring 2020, 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

- **NSF CAREER Award**, 2020.
- **Young Investigator Award, Air Force Office of Scientific Research (AFSOR)**, 2019.
- **Most Promising New Scholar Award**, Northern Arizona University, 2020.
- 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

32. Title: *SCC-PG: Just in Time Intervention for Patients with Chronic Heart Diseases in Arizona tribes*,  
Funding Agency: **National Science Foundation**  
Amount: Total: \$150,000  
Role: **Lead PI**, Duration: October 2021- September 2022.
31. Title: *Research Experience for Undergraduate (REU) 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: \$16,000,  
Role: PI,  
Duration: October 2021-October 2022.
30. Title: *Research Experience for Undergraduate (REU) Supplement for CPS: Medium: Wildland Fire Observation, Management, and Evacuation using Intelligent Collaborative Flying and Ground Systems*,  
Funding Agency: **National Science Foundation**,  
Amount: \$16,000,  
Role: PI,  
Duration: March 2022-March 2023.
29. Title: *Research Experience for Undergraduate (REU) Supplement for SWIFT: LARGE: AI-Enabled Spectrum Coexistence between Active Communications and Passive Radio Services: Fundamentals, Testbed and Data*,  
Funding Agency: **National Science Foundation**,  
Amount: \$16,000,  
Role: PI,  
Duration: March 2022-March 2023.
28. Title: *Collaborative Research: CCRI: New: Distributed Sensing & Computing Over Sparse Environments (DISCOVER) Platform*,  
Funding Agency: **National Science Foundation**  
Amount: Total: \$1.7 M, NAU's portion: \$1,366,513  
Role: **Lead PI**, Team: Navajo Technical University  
Duration: October 2021- September 2024.
27. Title: *Collaborative Research: CPS: Medium: Wildland Fire Observation, Management, and Evacuation using Intelligent Collaborative Flying and Ground Systems*,  
Funding Agency: **National Science Foundation**  
Amount: Total: \$1.2 M, NAU's portion: \$650,000  
Role: **Lead PI**, Team: Georgia Tech, Desert Research Institute, National Center for Atmospheric Research  
Duration: May 2021- April 2024.
26. Title: *Collaborative: Smart Health in the AI and COVID Era*,  
Funding Agency: **National Science Foundation**  
Amount: Total: \$50,000, NAU's portion: \$20,000  
Role: **NAU PI**, Team: University of Arizona  
Duration: March 2021- August 2021.
25. Title: *Career-Life Balance Supplement*,  
Funding Agency: **National Science Foundation**  
Amount: \$40,630,

- Role: Sole-PI,  
Duration: April 2021- August 2021.
24. Title: *CAREER: Toward Autonomous Decision Making and Coordination in Intelligent Unmanned Aerial Vehicles' Operation in Dynamic Uncertain Remote Areas*,  
Funding Agency: **Early CAREER Award, National Science Foundation**  
Amount: \$541,949,  
Role: Sole-PI,  
Duration: August 2020- August 2025.
  23. Title: *SWIFT: LARGE: AI-Enabled Spectrum Coexistence between Active Communications and Passive Radio Services: Fundamentals, Testbed and Data*,  
Funding Agency: **National Science Foundation**  
Amount: \$200,000,  
Role: NAU-PI,  
Duration: Jan 2021- Jan 2023.
  22. Title: *Nanotechnologies and Technology Modules for Computing Diversity*,  
Funding Agency: **Air Force Research Laboratory**  
Amount: \$5,400,000,  
Role: Co-PI, PI: Dr. Cambou  
Duration: January 2020- December 2023.
  21. Title: *Dynamic Data Driven Decision Making, Planning, and Communications in Autonomous Unmanned Aerial Vehicle Networks for Disaster Management*,  
Funding Agency: **Air Force Office of Scientific Research (AFOSR), Young Investigator Award**  
Amount: \$450,000,  
Role: Sole-PI,  
Duration: January 2020- December 2023.
  20. Title: *Predictive and Adaptive Communications for Real-time Dynamic Network Management in Autonomous Unmanned Aerial Vehicle Networks*,  
Funding Agency: **Air Force Research Laboratory**  
Amount: \$150,000,  
Role: PI,  
Duration: March 2020- March 2021. (Completed)
  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: Sole PI,  
Duration: September 2019- August 2021.
  18. 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,  
Duration: September 2018- August 2021.
  17. Title: *Cooperative Dynamic Spectrum Sharing in Heterogeneous Autonomous Communication Systems*,  
Funding Agency: **Air Force Research Laboratory**

- Amount: \$25,000,  
Role: Sole PI,  
Duration: Jan. 2019-Dec. 2019. (Completed)
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,  
Duration: January 2019- January 2021. (Completed)
  15. Title: *Dynamic Spectrum Leasing in Heterogeneous Unmanned Aerial Vehicle Networks*,  
Funding Agency: **Air Force Research Laboratory**  
Amount: \$129,000,  
Role: Sole PI,  
Duration: Jan. 2018-Dec. 2018. (Completed)
  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,  
Duration: August. 2018-Feb. 2019. (Completed)
  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),  
Duration: July 2017-December 2018. (Completed)
  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,  
Duration: 2017-2019. (Completed)
  11. *An Adaptive Game-theoretic Framework for Secure Spectrum Sharing*,  
Funding Agency: **Air Force Research Laboratory**,  
Amount: \$15,930.00,  
Role: Sole PI,  
Duration: 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),  
Duration: 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,  
Duration: 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),  
Duration: 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)  
Duration: 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,  
Duration: 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,  
Duration: 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), Duration: 2013.-2014. (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),  
Duration: 2013-2014. (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),  
Duration: 2013-2014. (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, Duration: 2013. (Completed)

## Book Chapters

6. M. Keshavarz, F. Afghah, "Trust Management for Autonomous Unmanned Aerial Systems", Book title: "Deep Learning Empowered Security in Cyber-Physical Systems", Elsevier, 2021.
5. A. Shamsoshoara, F. Afghah, "Airborne Fire Detection and Modeling using Unmanned Aerial Vehicles Imagery: Datasets and Approaches", Book title: "Handbook of Dynamic Data Driven Applications Systems", Editors: Frederica Darema, Erik Blasch, Springer, 2021.
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

5. F. Afghah, B. Cambou, "Authentication Based on a Challenge and Response Using a PUF", **Issued Patent**, Patent No. 10,469,273, November 5, 2019.
4. F. Afghah, B. Cambou, "Multi-state Unclonable Functions and Related Systems", **Issued Patent**, Patent No. 10,574,467, February 25, 2020.
3. F. Afghah, B. Cambou, "Authentication Based on a Challenge and Response Using a PUF and a Machine Learning Engine", **Issued Patent**, Patent No. 16/416,038 , April 15, 2020.
2. F. Afghah, A. Razi, K. Najarian, "False Alarm Suppression in Intensive Care Units", **Issued Paten**, Patent No. 16/195,585, May 12, 2020.
1. F. Afghah, S. Mousavi, "Systems and Methods for Detection and Prediction of Cardiac Events Using Deep Learning", Pending Patent, App. No. 17343499, filed June 9, 2021.

## Invention Disclosures

8. F. Afghah, "Wildland Fire Observation, Management, and Evacuation using Intelligent Collaborative Flying and Ground Systems", Filed August 2020.
7. A. Korenda, S. Assiri, F. Afghah. B. Cambou, "Keyless Encapsulation and Error Correction' Schemes', U.S. Provisional Pat. App. No. 63/121,604, filed December 4, 2020.
6. F. Afghah, S. Mousavi, "Patient ECG Heartbeat Classification and Analysis for Arrhythmia Detection", U.S. Provisional Pat. App. No. 62801881, filed February 6, 2019.
5. F. Afghah, A. Razi, K. Najarian, "Roulette Transform for Signal Processing", Invention disclosure, Disclosure ID: D2018-007, January 2018.
4. F. Afghah, E. Bentley, " Cooperative Target Execution System for Unmanned Aerial Vehicle Networks", Filed by AFRL, Sep. 2018.
3. 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.

## Datasets

1. Alireza Shamsoshoara, Fatemeh Afghah, Abolfazl Razi, Liming Zheng, Peter Fulé, Erik Blasch, November 19, 2020, "The FLAME dataset: Aerial Imagery Pile burn detection using drones (UAVs)", IEEE Dataport.

## Journal Papers

45. M. Gharib, F. Afghah, E. Bentley, "LB-OPAR: Load Balanced Optimized Predictive and Adaptive Routing for Cooperative UAV Networks", **Ad hoc Networks**, 2022.
44. S. A. Zekavat, F. Afghah, R. Askari, J. Delabrouille, N. French, J. Furtado, S. Hanany, and V. Lubecke, "Electromagnetic Spectrum Contribution in Astronomy, Health, Atmospheric, Geology and Environment Applications," Springer Nature International Journal of Wireless Information Networks (IJWIN), Special Issue on Paradigms of Intelligent Spectrum Management, 2022.
43. A. Rovira-Sugranes, F. Afghah, J. Chakareski, and A. Razi "A Review of AI-enabled Routing Protocols for UAV Networks: Trends, Challenges, and Future Outlook", **Ad Hoc Networks**, 2022.
42. A. Alipour, F. Afghah, D. Hely, V. Beroulle, G. Di-Natale, A. Korenda, B. Cambou, "Helper Data Masking for Physically Unclonable Function-based Key Generation Algorithms", **IEEE ACCESS**, 2022.
41. Priyan Malarvizhi Kumar, Shakila Basheer, Bharat S. Rawal, Fatemeh Afghah, Gokulnath Chandra Babu, Manimuthu Arunmozhi, "Traffic scheduling, network slicing and virtualization based on deep reinforcement learning, **Elsevier Computers and Electrical Engineering**, Volume 100, 2022.
40. V. Runge, T. Hocking, G. Romano, F. Afghah, P. Fearnhead, G. Rigai, "gfpop : an R Package for Univariate Graph-constrained Change-point Detection", **Journal of Statistical Software**, 2022.

39. Nhan Duc Nguyen, Anh-Tu Le, Munyaradzi Munochiveyi, Fatemeh Afghah, Evangelos Pallis, "Intelligent Reflecting Surface Aided Wireless Systems with Imperfect Hardware", **Electronics**, 2022.
38. M. Gharib, A. Owfi, F. Afghah, E. Bentley, "BlocKP: Key Pre-Distribution Based Secure Data Transfer", **IEEE IoT Journal**, Special issue on Empowering Future Generation Systems, 2021.
37. S. Alsamhi, M. Guizani, F. Afghah, H. Song, "Drones' Edge Intelligence over Smart Environments in B5G: Blockchain and Federated Learning Synergy", **IEEE Transactions on Green Communications and Networking**, 2022.
36. M. Mohammadinodoushan, B. Cambou, F. Afghah, I. Burke, "Reliable, Secure, and Efficient Hardware Implementation of Password Manager System Using Physical Unclonable Functions", **IEEE ACCESS**, 2021.
35. A. Rovira-Sugranes, F. Afghah, A. Razi, "Fully-echoed Q-routing with Simulated Annealing Inference for Flying Adhoc Networks", **IEEE Transactions on Network Science and Engineering**, 2021.
34. P. Kumar, C. Hong, F. Afghah, G. Manogaran, K. Yu, Q. Hua, "Clouds Proportionate Medical Data Stream Analytics for Internet of Things-based Healthcare Systems", **IEEE Journal of Biomedical and Health Informatics**, Special Issues on Emerging IoT-driven Smart Health: from Cloud to Edge, Vol. 26, No. 3, 2022.
33. A. Shamsoshoara, F. Afghah, E. Blasch, J. Ashdown, M. Bennis, "UAV-assisted Communication in Remote Disaster Areas using Imitation Learning", **IEEE Open Journal of the Communication Society**, Special Issue on Aerial Wireless Networks: Drones for Communications and Communications for Drones, 2021.
32. A. Shamsoshoara, F. Afghah, A. Razi, L. Zheng, P. Fule, E. Blasch, "Aerial Imagery Pile burn detection using Deep Learning: the FLAME dataset", **Computer Networks**, 2021.
31. M. -S. Van Nguyen, D. -T. Do, F. Afghah, S. M. Riazul Islam and A. -T. Le, "Exploiting Secrecy Performance of Uplink NOMA in Cellular Networks," **IEEE Access**, doi: 10.1109/ACCESS.2021.3092830, 2021.
30. S. H. Alsamhi, F. Afghah, R. Sahal, A. Hawbani, A. A. Al-qaness, B. Lee, M. Guizani, "Green Internet of Things Using UAVs in B5G Networks: A Review of Applications and Strategies", **Ad Hoc Networks Journal**, 2021.
29. S. Mousavi, F. Afghah and U. R. Acharya, " ECG Language Processing (ELP): a New Technique to Analyze ECG Signals", **Elsevier Computer Methods and Programs in Biomedicine Journal**, 2021.
28. A. Fotoohinasab, T. Hocking, F. Afghah, "A Greedy Graph Search Algorithm Based on Changepoint Analysis for Automatic QRS-Complex Detection", **Elsevier Computers in Biology and Medicine Journal**, 2021.
27. M. Keshavarz, M. Algharib, F. Afghah, J. Ashdown, "UASTrustChain: A Decentralized Blockchain-based Trust Monitoring Framework for Autonomous Unmanned Aerial Systems", **IEEE ACCESS**, 2021.
26. S. Mousavi, F. Afghah and U. R. Acharya, "HAN-ECG: An Interpretable Atrial Fibrillation Detection Model Using Hierarchical Attention Networks", **Elsevier Computers in Biology and Medicine Journal**, Volume 127, 104057, December 2020.

25. A. Shamsoshoara, A. Korenda, A. Afghah, S. Zeadally, "A Survey on Physical Unclonable Function (PUF)-based Security Solutions for Internet of Things", **Computer Networks**, 2020.
24. Dinh-Thuan Do, Chi-Bao Le, Fatemeh Afghah, "Enabling Full-Duplex and Energy Harvesting in Uplink and Downlink of Small-cell Network Relying on Power Domain based Multiple Access", **IEEE ACCESS**, 2020.
23. B. Ghazanfari, F. Afghah, M. Hagiaghay, "Inverse Feature Learning: Feature learning based on Representation Learning of Error", **IEEE Access**, 2020.
22. S. Mousavi, A. Fotoohinasab, F. Afghah, "Single-modal and multi-modal False Arrhythmia Alarm Reduction using Attention-based Convolutional and Recurrent Neural Networks", **PLOS ONE**, 15(1):e0226990, 2020.
21. A. Shamsoshoara, F. Afghah, A. Razi, S. Mousavi, J. Ashdown, K. Turk, "An Autonomous Spectrum Management Scheme for UAV Networks in Disaster Relief Operations", **IEEE Access**, 2020.
20. B. Zolfaghari, G. Srivastava, S. Roy, H. Nemati, F. Afghah, T. Koshiba, A. Razi, K. Bibak, P. Mitra, B. Kumar Rai, "Content Delivery Networks: State of the Art, Trends and Future Roadmap", **ACM Computing Surveys**, 2020.
19. 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**, 2020.
18. S. Mousavi, F. Afghah, and R. Acharya, "SleepEEGNet: Automated Sleep Stage Scoring with Sequence to Sequence Deep Learning Approach", **PLoS ONE**, 14(5): e0216456, 2019.
17. Jacob Chakareski, Syed Naqvi, Nicholas Mastronarde, 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", **Journal of Communications and Networks (JCN)**, Special Issue on Amateur Drone and UAV Communications and Networks, vol. 20, no. 5, pp. 434-442, October 2018.
13. M. Zaeri Amirani, F. Afghah, J. Ashdown, "Optimal Relaying Beamforming in MABC Bidirectional Cognitive Radio Networks in Presence of Interferers", **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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67. N. Namvar, F. Afghah, "Heterogeneous Airborne mmWave Cells: Optimal Placement for Power-Efficient Maximum Coverage:, IEEE INFOCOM Workshop on Artificial Intelligence and Blockchain-Enabled Secure and Privacy-Preserving Air and Ground Smart Vehicular Networks (AIBESVN), 2022.
  66. E. Adib, F. Afghah, J. Provost, "Arrhythmia Classification using CGAN-augmented ECG Signals", 44th Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC'22), 2022.

Peer  
Reviewed  
Conference  
Papers

65. N. Namvar, F. Afghah, "Joint 3D Placement and Interference Management for Drone Small Cells", *IEEE Asilomar Conference on Signals, Systems, and Computers ASILOMAR*, 2021.
64. A. Korenda, F. Afghah, A. Razi, B. Cambou and T. Begay, "Fuzzy Key Generator Design using ReRAM-Based Physically Unclonable Functions", *IEEE International Conference on Physical Assurance and Inspection of Electronics*, 2021.
63. A. Korenda, S. Assiri, F. Afghah, B. Cambou, "An Error Correction Approach to Memristors PUF-based Key Encapsulation", *IEEE International Conference on Omni-layer Intelligent systems (IEEE COINS)*, 2021.
62. M. Gharib, F. Afghah, "How UAVs' Highly Dynamic 3D Movement Improves the Network Security?", 22nd IEEE International Symposium on a World of Wireless, Mobile and Multimedia Networks (**WoWMoM**), 2021.
61. M. Gharib, S. Nandadapu, F. Afghah, "An Exhaustive Study of Using Commercial LTE Network for UAV Communication in Rural Areas", **IEEE ICC Workshop on Integrating UAVs into 5G and Beyond**, 2021.
60. M. Gharib, F. Afghah, E. Bentley, "OPAR: Optimized Predictive and Adaptive Routing for Unmanned Aerial Vehicle Networks", **IEEE INFOCOM Workshop on Wireless Sensor, Robot and UAV Networks (WiSARN)**, 2021.
59. J. Belen, S. Mousavi, A. Shamsoshoara, F. Afghah, "An Uncertainty Estimation Framework for Risk Assessment in Deep Learning-based AFib Classification", *IEEE Asilomar Conference on Signals, Systems, and Computers ASILOMAR*, 2020.
58. A. Fotoohinasab, T. Hocking, F. Afghah, "A Graph-Constrained Change-point Learning Approach for Automatic QRS-Complex Detection", *IEEE Asilomar Conference on Signals, Systems, and Computers ASILOMAR*, 2020.
57. Q. Huang, A. Razi, F. Afghah, P. Fule, "Wildfire Spread Modeling with Aerial Image Processing", *IEEE Workshop on Wireless Networking, Planning, and Computing for UAV Swarms (SwarmNet)*, in conjunction with IEEE International Symposium on a World of Wireless, Mobile, and Multimedia Networks (WOWMOM), 2020.
56. A. Fotoohinasab, T. Hocking, F. Afghah, "A Graph-constrained Change-point Detection Approach for ECG Segmentation", *42th Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC)*, July 2020.
55. M. Keshavarz, A. Shamsoshoara, A. Afghah, J. Ashdown, "A Real-time Framework for Trust Monitoring in a Network of Unmanned Aerial Vehicles", *IEEE International Conference on Computer Communications (INFOCOM), Workshop on Wireless Sensor, Robot and UAV Networks*, July 2020.
54. Haiyu Wu, Huayu Li, Alireza Shamsoshoara, Abolfazl Razi, Fatemeh Afghah, "Transfer Learning for Wildfire Identification in UAV Imagery", *54th Annual Conference on Information Sciences and Systems (CISS)*, Princeton University, March 2020.
53. B. Ghazanfari, S. Zhang, F. Afghah, and N. Payton- McCauslin, "Simultaneous Multiple Features Tracking of Beats: A Representation Learning Approach to Reduce False Alarm Rate in ICUs", *IEEE International Conference on Bioinformatics and Biomedicine (BIBM)*, International Workshop on Deep Learning in Bioinformatics, Biomedicine, and Healthcare Informatics (DLB2H), San Diego, CA 2019.

52. S. Islam, F. Afghah, A. Razi, P. Fule, "Fire Frontline Monitoring by Enabling UAV-Based Virtual Reality with Adaptive Imaging Rate", *IEEE Asilomar Conference on Signals, Systems, and Computers* **ASILOMAR**, 2019.
51. 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.
50. A. Balasubramaniam, A. Paul, F. Afghah, "Combined Dense Urban Traffic Surveillance, Road-Traffic Accident Analysis and Principal Component Analysis for ITS in Smart-City based Environments", *IEEE TENCON*, 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.
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. Mastrorarde, 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," *48<sup>th</sup> 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.

## Under Review Papers

1. Saeed Hamood Alsamhi, Alexey V. Shvetsov, Radyah sahal, Fatemeh Afghah, Ammar Hawbani, Mohsen Guizan, Edward Curry, "Federated Learning Empowered Drone Computing in B5G-enabled IoT : Challenges and Future Trends", 2022.
2. S. Alsamhi, F. Almalki, A. Hawbani, M.n Guizani, B. Lee, F. Afghah, H. Song, "Blockchain-Empowered Green and Sustainable IoT Computing for Industry 4.0 in B5G: Opportunities and Challenges", IEEE IoT Journal, 2021.
3. A. Shamsoshoara, S. Mousavi, F. Afghah, I. Guvenc, "Joint Path planning and Power Allocation of a Cellular-ConnectedUAV using Apprenticeship Learning via Deep Inverse Reinforcement Learning", submitted to **IEEE Transactions on Mobile Computing**, 2021.
4. P. Kumar, Priyan, D. Rawat, A. Bashir, F. Afghah, C. Konstantinou, C. Hong, "RMSS—Reformed Multi-Source Sharing Method for Distributed Resource Servers in Edge Platforms", IEEE Transactions on Network Science and Engineering, 2021.
5. Malarvizhi Kumar, Priyan; Konstantinou, Charalambos; Afghah, Fatemeh; Rawat, Danda; Hong, Choong Seon, "A Cybertwin Function-based Service Optimization Scheme for Resource Allocation in 6G Communication", IEEE Transactions on Network Science and Engineering, 2021.
6. Malarvizhi Kumar, Priyan; Afghah, Fatemeh; Rawat, Danda B.; Hong, Choong Seon, "Variant Health Data Analytical Model for Asynchronous Wearable Sensor Data Streams", **Transactions on Network Science and Engineering**, 2021.
7. N. Namvar, F. Afghah, M. Bennis, "mmWave-Equipped Drone Small Cells:Optimal Positioning and Cell Association", submitted 2021.
8. N. Namvar, F. Afghah, I. Guvenc, "Heterogeneous Drone Small Cells: Optimal 3D Placement for Downlink Power Efficiency and Rate Satisfaction", submitted 2022.
9. E. Adib, F. Afghah, J. Prevost, "Synthetic ECG Signal Generation Using Generative Neural Networks", submitted to IEEE BHI, 2021.

## Posters

17. F. Afghah, "Detection and Prediction of Cardiac Events", 2020 NSF Smart and Connected Health PI Meeting, January 2020.
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 ReRAM 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. Nichelle'Le 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

- The NSF CAREER project on "autonomous UAV networks" was featured in **Arizona TechConnect Magazine**, March 2021.  
Drones to become more autonomous in remote environments.
- Our project on "Drone-based wildfire monitoring" was featured on NAU News, March 2021. NAU leading NSF grant that looks at the potential for drones in responding to forest fires.
- Our project on "Operation of drone teams in unknown environments" was featured on NAU News, July 20.  
NAU researcher receives NSF CAREER award to develop drones that operate autonomously in remote environments.
- Our project on "Drone-based disaster management" was featured on NAU News, Nov. 2019.  
Afghah wins Air Force's Young Investigator Award for research into smart drones
- Our project on "Nanotechnologies and technology modules for computing diversity" was featured on NAU News, Oct 2019.  
NAU cyber engineering team wins \$6M grant to develop computing solutions to combat cyberattacks
- PUF-based security solution was featured on **NSF Website**, 2018.  
Northern Arizona University assistant professor Fatemeh Afghah and professor of practice Bertrand Cambou are working to develop and commercialize a new generation of security solutions based on the fabrication variability of ultra-low-power memories.
- Our project on "developing PUF-based security solutions for IoT" was featured on NAU News, Nov. 2018.  
NAU electrical engineers to lead development, commercialization of next-gen cybersecurity solutions for Internet of Things
- Interview about the PUF-based cybersecurity project with KJZZ radio by Mark Brodie, December 2018.  
How Secure Are Our Smart Homes? Researchers Work To Protect Devices From 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 & Panels

1. Plenary talk, "UAV Communications, Challenges and Opportunities", 3rd Buffalo Day for 5G and Wireless Internet of Things, November 2021.
2. Tutorial talk, "On-demand Key Generation with Tamper Resistant ReRAMs", *2021 IEEE Microelectronic Design and Test Symposium*, Joint talk with Dr. Bertrand Cambou.
3. Toward Utilizing Autonomous Unmanned Aerial Vehicle (UAV) Networks in Disaster Management", University of Buffalo, 2021.
4. Toward Utilizing Autonomous Unmanned Aerial Vehicle (UAV) Networks in Disaster Management", Clemson University, 2021.
5. "Expert Panel: Research during a pandemic – Lessons learned", Panelist, **National Science Foundation Workshop on Smart Health in the AI and COVID Era**, March 2021.
6. "Expert Panel: AI in Health and Biomedical Research-Challenges and Opportunities", Moderator, **National Science Foundation Workshop on Smart Health in the AI and COVID Era**, March 2021.
7. "Expert Panel: Novel Spectrum Uses", Panelist, **National Science Foundation Workshop on Wireless, Spectrum and Innovation**, August 2020.
8. "AI-enabled Communications, Spectrum Sharing, and Task Allocation in Autonomous UAV Networks", Air Force Research Laboratory (virtual), August 2020.
9. "Toward Disaster Management with Autonomous UAV Networks", Wayne State University, March 2020.
10. "Expert Panel: AI Needs for the Future of Smart Health", Panelist, Advancing Health through Science, Smart and Connected Health (SCH) Principal Investigator Meeting, **National Science Foundation**, January 2020.
11. Society of Women Engineers Professors Panel Event, Northern Arizona University, November 2018.
12. "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.
13. "Ethics of Automation and Artificial Intelligence", **Museum of Northern Arizona**, Panelist, September 2018.
14. "Accelerating into the Future", **2018 Flagstaff Festival of Science**, Panelist, September 2018.
15. "Communication Networks", **Flagstaff Summit Middle School**, October 2018.
16. "Applications of Game Theory in Cooperative Communication Networks", Department of Mathematics and Statistics, Northern Arizona University, November 2016.
17. "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.
18. "Small Satellite Communications", **North Carolina Museum of Natural Science**, Raleigh, NC, August 2015.
19. "Communication Networks", STAR Charter School, Flagstaff Science Festival, September 2016.

20. "Intersatellite Communications for Small Satellite Networks", **National Institute of Aerospace**, Hampton, VA, September 2014.
21. "Relay Technologies for WiMAX and LTE-Advanced Mobile Systems", **IEEE Special Presentation on WiMAX, University of Maine**, Orono, ME, Nov. 2009.
22. Youth Forum Panelist, **International Telecommunication Union (ITU) TELECOM World**, 2008.

## Teaching

1. **Instructor**, Clemson University, (Fall 2021 )  
Communication Systems (ECE 4270)
2. **Instructor**, Northern Arizona University, (Spring 2021 )  
Advanced Communications and Wireless Sensing (EE436/EE536)
3. **Instructor**, Northern Arizona University, (Fall 2020 )  
Communication Networks (EE430) Student Evaluation Rate: 3.5 (out of 4)
4. **Instructor**, Northern Arizona University, (Spring 2020)  
Signals and Systems Lecture & Laboratory (EE348)
5. **Instructor**, Northern Arizona University, (Fall 2019 )  
Communication Networks (EE430) Student Evaluation Rate: 3.5 (out of 4)
6. **Instructor**, Northern Arizona University, (Spring 2019 )  
Signals and Systems Lecture & Laboratory (EE348) Student Evaluation Rate: 3.46 (out of 4)
7. **Instructor**, Northern Arizona University, (Fall 2018 )  
Communication Networks (EE430) Student Evaluation Rate: 3.79 (out of 4)
8. **Instructor**, Northern Arizona University, (Spring 2018 )  
Signals and Systems Lecture & Laboratory (EE348) Student Evaluation Rate: 3.49 (out of 4)
9. **Instructor**, Northern Arizona University, (Fall 2017 )  
Communication Networks (EE430) Student Evaluation Rate: 3.79 (out of 4)
10. **Instructor**, Northern Arizona University, (Spring 2017 )  
Signals and Systems & Laboratory (EE348) Student Evaluation Rate: 3.26 (out of 4)
11. **Instructor**, Northern Arizona University, (Fall 2016)  
Communication Networks (EE430) Student Evaluation Rate: 3.06 (out of 4)
12. **Advisor**, Northern Arizona University, (Spring 2016, Fall 2016, Spring 2017, Summer 2017, Fall 2017, Spring 2018 )  
Thesis (EE 699)
13. **Advisor**, Northern Arizona University, ( Summer 2018, Fall 2018, Spring 2019 )  
Thesis (INF 799)
14. **Advisor**, Northern Arizona University, ( Fall 2018, Summer 2019 )  
Independent Study (INF 697)
15. **Advisor**, Northern Arizona University, (Spring 2016, Fall 2016, Spring 2017, Spring 2018, Fall 2018)  
Graduate Research (EE 685)
16. **Advisor**, Northern Arizona University, (Spring 2016 )  
Undergraduate Research (EE 485)

17. **Instructor**, Northern Arizona University, (Spring 2016 )  
Signals and Systems Lecture & Laboratory (EE348) Student Evaluation Rate: 2.89 (out of 4)
18. **Instructor**, Northern Arizona University, (Fall 2015 )  
Wireless Communication and Networking (EE434 & EE534) Student Evaluation Rate: 2.63 & 3.55 (out of 4)
19. **Instructor**, North Carolina A&T State University, (Fall 2014 )  
Advanced Topics in Wireless Communications (ELEN 885)  
Student Evaluation Rate: 4.65 (out of 5)
20. **Instructor**, North Carolina A&T State University, (Spring 2014)  
Linear Systems and Signals (ELEN 400)  
Student Evaluation Rate: 4.33 (out of 5)
21. **Instructor**, North Carolina A&T State University, (Spring 2014)  
Wireless Information Networks (ELEN 752)  
Student Evaluation Rate: 4.63 (out of 5)
22. **Instructor**, North Carolina A&T State University, (Fall 2013)  
Linear Systems and Signals (ELEN 400)  
Student Evaluation Rate: 3.88 (out of 5)
23. **Instructor**, North Carolina A&T State University, (Spring 2015)  
Wireless Information Networks (ELEN 752) Student Evaluation Rate: 4.31 (out of 5)
24. **Instructor**, North Carolina A&T State University, (Spring 2015)  
Linear Systems and Signals (ELEN 400) Student Evaluation Rate: 4.34 (out of 5)
25. **Advisor**, North Carolina A&T State University, (Summer 2014, dual session )  
Special Projects (ELEN 686)
26. **Advisor**, North Carolina A&T State University, (Fall'13 & Spring'14)  
Senior Design Project I (ELEN 598)
27. **Advisor**, North Carolina A&T State University, (Spring'14 & Fall'14 )  
Senior Design Project II (ELEN 599)
28. **Teaching Assistant**, University of Maine. (Fall 2011)  
Signal and Systems Course
29. **Teaching Assistant**, University of Maine. (Spring 2010)  
Introduction to Electrical and Computer Engineering
30. **Mentoring Senior Students**, MERITS Program, Sponsored by Maine Space Grant Consortium & UMaine, Summer 2010 & 2011.
31. **Teaching Assistant**, K. N. Toosi University of Technology, (2006-2008)  
Communication Systems Course  
Electronic and Circuit Course
32. **Trainer**, K. N. Toosi University of Technology, (2006)  
fields including (Mobile Networks, GSM Systems, Spread spectrum)

<b>Visitors</b>	<ol style="list-style-type: none"> <li>1. Dr. Hui Li, Assistant Professor, (Spring 2014) Electrical and Computer Engineering Department, Henan Polytechnic University, China.</li> </ol>
<b>Mentorship- Postdoctoral Researchers &amp; Research Scientists</b>	<ol style="list-style-type: none"> <li>1. Dr. Mohammed Gharib, Postdoctoral Researcher, (April 2020-April 2021)</li> <li>2. Dr. Nima Namvar, Research Scientist, (July 2020-present)</li> <li>3. Dr. Mehrdad Khaledi, Postdoctoral Researcher, (November 2017-August 2018) Co-supervised with Dr. Razi, Now: Assistant Professor, Department of Mathematics and Computer Science, Suffolk University, Boston MA</li> <li>4. Mohammad Zaeri Amirani, Research Specialist, (Jan. 2016-August 2016)</li> </ol>
<b>Current Graduate Students Supervised</b>	<ol style="list-style-type: none"> <li>1. Ali Owfi, PhD student, Computer Engineering Program, Clemson University Research: AI-assisted Wireless Communications, start date: January 2021.</li> <li>2. Ashish Chittimilla, MS student, Computer Engineering Program, Clemson University Research: Drone Communications, start date: August 2021.</li> <li>3. Amir Ali Pour, visiting PhD student from University Grenoble Alpe Research: Hardware security, start date: November 2021.</li> </ol>
<b>Current Undergraduate Students Supervised</b>	<ol style="list-style-type: none"> <li>1. Bryce Hopkins, NSF REU, Undergraduate Research Assistant, Major: Electrical Engineering, January 2021- present. Project: UAV systems.</li> </ol>
<b>Past Students Supervised</b>	<p><b>PhD Students</b></p> <ol style="list-style-type: none"> <li>1. Alireza Shamsoshoara, PhD in Informatics and Computing Program, Research: UAV Communications and Spectrum Management, start date: August 2017- May 2021. Now <b>AI scientist, Volkswagen</b></li> <li>2. Syed Sajad Mousavi, PhD in Informatics, (August 2017-May 2020) Thesis: ECG Signal Processing for Heart Arrhythmia Detection, Now <b>Postdoctoral Associate at Harvard University.</b></li> <li>3. Behzad Ghazanfari, PhD in Informatics and Computing Program, Research: Machine learning and Reinforcement Learning, start date: Jan. 2018- Dec 2020.</li> </ol> <p><b>Master Students</b></p> <ol style="list-style-type: none"> <li>1. Sixian Zhang, Master's in Informatics (August 2019-May 2021) Research: Machine Learning-based ECG Analysis,</li> <li>2. Atiyeh Fotoohinasab, Master's in Informatics, (August 2018-August 2020) Now <b>PhD student at University of Arizona.</b></li> </ol>

3. Alireza Shamsoshoara, Master's in Informatics, (August 2017-May 2019)  
Now **PhD student at Northern Arizona University** working under my supervision.
4. Syed Sajad Mousavi, Master's in Informatics, (August 2017-December 2018)
5. Qian Zhao, MSc Student, start date: August 2018.
6. 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.
7. 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**.
8. 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**.
9. 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**.
10. 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. Orvien James Belen, NSF REU, Undergraduate Research Assistant, Major: Electrical Engineering, April 2019- May 2020.  
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 Radio-based Communications
4. Gabriel Bixler, Undergraduate Research Assistant, Major: Electrical Engineering, August 2019- December 2019.  
Project: Biomedical Signal Processing
5. Haiyu Wu, Undergraduate Research Assistant, Major: Electrical Engineering, August 2019- December 2019. Project: IoT security
6. Nathan Payton-McCauslin, **NSF REU**, Undergraduate Research Assistant supported by NSF REU, (August 2017-December 2018)  
Now with **Raytheon**.

7. James Todd, **NSF REU**, Undergraduate Research Assistant supported by NSF REU, (August 2017-December 2018)  
Now with **State Farm**.
8. Arnau Rovria Sugranyes, Undergraduate Research Assistant, Northern Arizona University, Spring 2016.  
Now **PhD student at Northern Arizona University**.
9. Boubacar Abou Tchoussou, **NSF LSAMP**, 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**.
10. Jabari Stegall, **NSF LSAMP**, Undergraduate Research Assistant, North Carolina A&T State University, Fall'14, Spring'15.  
Now **PhD student at Worcester Polytechnic Institute**.
11. Rafiya Chowdhury, Undergraduate Research Assistant, North Carolina A&T State University, Spring'15.
12. Denis Yolinga, Undergraduate Research Assistant, North Carolina A&T State University, Spring'15.
13. Reginald Farmer, Undergraduate Research Assistant, North Carolina A&T State University, Spring'15.
14. NichelleLe Carrington, Jasmine Gee, Patronia Marshall, Bobby White, Muhammad Hassan, Emmanuel Arzate, Ayman Aalem, Boubacar Abou Tchoussou, Odette Bryant (Senior design groups' members)

#### **Students Awards**

1. Alireza Shamsoshoara, NSF Grant to attend POWDER-RENEW Mobile and Wireless Week, September 2019.
2. Ashwija Korenda, NSF Travel Grant to attend IEEE SECON, June 2019.
3. Ashwija Korenda, iREDEFINE Professional Development Award, March 2019.
4. Boubacar Abou Tchoussou, **College of Art and Sciences Outstanding Undergraduate Student of the Year**, North Carolina A&T State University, 2014-2015.
5. Boubacar Abou Tchoussou, nominated for the **Chancellor Award for Academic Excellence**, North Carolina A&T State University, 2014-2015.
6. Jabari Stegall, NSF travel grant to attend 2015 Emerging Researcher National (ERN) conference, Washington, DC, Feb. 2015.
7. 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).  
Now: Postdoc at Carnegie Mellon University.
6. Arnau Rovira-Sugranes, Northern Arizona University (2019-2021).  
Now: AI engineer at U-Haul.
7. Han Peng, Northern Arizona University (2019-2022).
8. Naimahmed Nesaragi, National Institute of Technology Goa, India (2021-present)
9. Max Faykus, Clemson University, (2022-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)
7. Alexander Dahlmann, Northern Arizona University (2019-2020)
8. Kristiyan Milev, Northern Arizona University (2019-2020)
9. Zaoyi Chi, Northern Arizona University (2019-2020)
10. Huayu Li, Northern Arizona University (2019-2021)

#### **Capstone Teams**

1. Team: [Phoenix Drone](#), EE program, Northern Arizona University, .  
Project: Drone-based Wildfire Monitoring, (Fall 2020-Spring 2021)  
Members: Suzan Brown Nasona, Jimmy Thiennhat Banh, Ziming Li
2. Team: [Fire Scout](#), CS program, Northern Arizona University,  
Project: Drone-based Wildfire Monitoring, (Fall 2020-Spring 2021)  
Members: Richard Sansom, Jacob C Hagan, Kenneth Ronald Bixler Klawitter, Matthew Briody, Nicholas P Bollone.
3. Team: [Wildfire](#), EE program, Northern Arizona University,  
Project: Drone-based Wildfire Monitoring, (Fall 2019-Spring 2020)  
Members: Haiyu Wu, Oshan Wijesooriya, Yue Zhang, Kun Xiao.
4. Team: [Data Menders](#), CS program, Northern Arizona University,  
Project: Multi-factor Analysis to Reduce False Alarms in Intensive Care Units, (Fall 2017-Spring 2018)  
Members: Robert Rasmussen, Nathan Isaac Payton- McCauslin, Alexander John Grzesiak, James Todd.
5. Team: [Genius Ones](#), North Carolina A&T State University,  
Project: Home Out-Patient Monitoring Equipment, (Fall 2013- Spring 2014)  
Members: Jasmine Gee, Bobby White, NichelleLe Carrington, Patronia Marshall.

6. Team: OBEAM, North Carolina A&T State University,  
Project: QuickPark (smart parking locating application using wireless sensor networks),  
(Spring 2014- Fall 2015)  
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

- **Organizer, NSF Smart Connected Health PIs Workshop**, 2021.
- **Mentoring Co-chair**, Networking Networking Women (*N<sup>2</sup>Women*) Board, (2019 - 2021).
- **Mentor** to Dr. Laxima Niure Kandel, Assistant Professor of Computer Science Embry-Riddle Aeronautical University.
- **Mentor** to Dr. Laxima Niure Kandel, Assistant Professor of Computer Science Embry-Riddle Aeronautical University.
- **Mentor** to Dr. Shiny Abraham, Associate Professor, Electrical and & Computer Engineering, Seattle University.
- **Mentor**, IranWIC Mentorshop, (2021-present).
- **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**, 2014-2021.
  - Networking Technology and Systems (NeTS) program (small)
  - Networking Technology and Systems (NeTS) program (medium)
  - Smart and Connected Communities
  - NeTS Wireless Medium: Network panel
  - Centers of Research Excellence in Science and Technology (CREST) program
  - Wireless Innovation between Finland and the US (WiFiUS) program
  - Partnerships for Innovation (PFI) program, Diagnostics & Biosensors
  - Partnerships for Innovation (PFI) program, Wireless & Radar Technologies
  - Partnerships for Innovation (PFI) program, Information and Communications Technologies
  - Smart Connected Health program
  - BigData Spokes program
  - Cyber Physical Systems (CPS) program
  - CISE Research Initiation Initiative (CRII) program
  - Graduate Research Fellowship program
- Career mentoring for high school students, Flagstaff High School 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 (*N<sup>2</sup>Women*), (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.

**Associate Editor & Guest Editor**

- **Associate Editor, ACM Transactions on Computing for Healthcare** , (2022-present).
- **Editorial Board Member, Elsevier Computer Networks** , (2021-present).
- **Editorial Board Member, Elsevier Journal of Network and Computer Applications** , (2021-present).
- **Editorial Board Member, Elsevier Ad Hoc Networks** , (2020-present).
- **Associate Editor, Aerial and Space Networks, Frontiers Journal** , (2020-present).
- **Associate Editor, Springer Neural Processing Letters**, (2020-present).
- **Guest Editor** , "*Spectrum Sharing for Future Networks*", International Journal of Wireless Information Networks, 2021.
- **Guest Editor** , *Special Issue on Applications of Artificial Intelligence for 5G and Other Telecommunication Technologies*, Computational Intelligence (Wiley), 2021.
- **Editorial Board Member, IET Wireless Sensor Systems Journal**, (2018-2021).
- **Guest editor**, *Special Issue on Simulations and Machine Learning via Big Data for Prediction, Detection, Treatment or Rehabilitation*, International Journal of Environmental Research and Public Health, MDPI, 2020.
- **Topic Editor, MDPI Sensors Journal**, (2020-present).
- **Guest Editor, Special Issue on Reconfigurable Intelligent Surfaces (RIS)-Aided Wireless Communications for 6G Cellular Networks, Electronics**, 2021.

#### Chair & Organizer

- **Co-Chair & Organizer** , First Workshop on "Test and Evaluation of Programmable Networks", in conjunction with IEEE International Conference on Distributed Computing in Sensor Systems (DCOSS), 2022.
- **Co-Chair & Organizer** , Fourth IEEE Workshop on Wireless Networking, Planning, and Computing for UAV Swarms (SwarmNet), in conjunction with IEEE International Symposium on a World of Wireless, Mobile, and Multimedia Networks (WOWMOM) 2022.
- **Publication co-chair**, International Conference on Cyber-Physical Systems (ICCP) 2022.
- **Publicity Chair** , IEEE International Conference on Omni-layer Intelligent systems (COINS), 2022.
- **Track chair** , Communication, Connectivity, and Networking Track, IEEE International Conference on Omni-layer Intelligent systems (COINS), 2022.
- **Tutorial Co-chair** , 19<sup>th</sup> IEEE Annual Consumer Communications & Networking Conference (CCNC 2022).
- **Organizer, NSF Smart Health PIs Workshop on "Smart Health in the AI and COVID Era"** , 2021.
- **Co-Chair & Organizer** , IEEE Workshop on Wireless Networking, Planning, and Computing for UAV Swarms (SwarmNet), in conjunction with IEEE International Symposium on a World of Wireless, Mobile, and Multimedia Networks (WOWMOM) 2021.

- **Publicity Chair** , IEEE International Conference on Omni-layer Intelligent systems (COINS), 2021.
- **Student Travel Award Co-Chair** , Cyber-Physical Systems and Internet-of-Things (CPS-IoT) Week 2021.
- **Track chair** , Communication, Connectivity, and Networking Track, IEEE International Conference on Omni-layer Intelligent systems (COINS), 2021.
- **Co-Chair & Organizer** , IEEE Workshop on Wireless Networking, Planning, and Computing for UAV Swarms (SwarmNet), in conjunction with IEEE International Symposium on a World of Wireless, Mobile, and Multimedia Networks (WOWMOM) 2020.
- **Publicity Chair** , 18<sup>th</sup> IEEE Annual Consumer Communications & Networking Conference (CCNC 2021).
- **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)
- **Registration chair**, IEEE International Conference on Wireless for Space and Extreme Environments (WiSEE 2019)

#### Technical Program Committee:

- IEEE 20th Annual Consumer Communications & Networking Conference (CCNC), 5G and Towards 6G Track, 2023.
- IEEE 33th Annual International Symposium on Personal, Indoor and Mobile Radio Communications (PIMRC), 2022.
- 8<sup>th</sup> ACM Workshop on Micro Aerial Vehicle Networks, Systems, and Applications (DroNet 2022),  
Co-located with ACM MobiSys, 2022.
- International Workshop on Wireless Communications and Networking in Extreme Environments (WCNEE), 2022.
- IEEE International Conference on Communications (ICC), Selected Areas in Communications-Aerial Communications Track 2022.
- IEEE International Symposium on Dynamic Spectrum Access Networks (DySPAN), 2021.
- IEEE 19th Annual Consumer Communications & Networking Conference (CCNC), 5G and Towards 6G Track, 2022.
- IEEE 32nd Annual International Symposium on Personal, Indoor and Mobile Radio Communications (PIMRC), 2021.
- ACM/IEEE International Conference on Cyber-Physical Systems (ICCPS), IoT-CPS Week 2021.

- Workshop on Machine Learning for Smart Wireless Systems, in conjunction with IEEE International Conference on Distributed Computing in Sensor Systems (DCOSS), 2021.
- 5th IEEE International Workshop on Wireless Communications and Networking in Extreme Environments (WCNEE), in conjunction with IEEE International Conference on Distributed Computing in Sensor Systems (DCOSS), 2021.
- IEEE International Conference on Omni-layer Intelligent systems (COINS), 2021.
- IEEE International Conference on Wireless for Space and Extreme Environments (WiSEE), 2021.
- 2021 Annual Modeling and Simulation Conference (ANNSIM), 2021.
- 14<sup>th</sup> International Workshop on Wireless Sensor, Robot and UAV Networks , in conjunction with by IEEE International Conference on Computer Communications (IEEE INFOCOM), 2021.
- IEEE Consumer Communications and Networking Conference (CCNC), 2021.
- 21<sup>st</sup> IEEE International Symposium on a World of Wireless, Mobile and Multimedia Networks (WoWMoM) 2020.
- Annual IEEE International Symposium on Personal, Indoor and Mobile Radio Communications (PIMRC 2020), London, UK.
- 13<sup>th</sup> International Workshop on Wireless Sensor, Robot and UAV Networks , in conjunction with by IEEE International Conference on Computer Communications (IEEE INFOCOM), 2020.
- IEEE International Symposium on Dynamic Spectrum Access Networks (DySPAN 2019), Newark, NJ.
- 17<sup>th</sup> IEEE Annual Consumer Communications & Networking Conference (CCNC 2020).
- ACM/IEEE International Conference on Cyber-Physical Systems (ICCP2020), Zurich, Switzerland.
- Annual IEEE International Symposium on Personal, Indoor and Mobile Radio Communications (PIMRC 2019), Istanbul, Turkey.
- 16<sup>th</sup> Annual IEEE International Conference on Sensing, Communication and Networking (**IEEE SECON 19**), Boston, USA.
- 5<sup>th</sup> 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.
- 12<sup>th</sup> International Workshop on Wireless Sensor, Robot and UAV Networks, in conjunction with by IEEE International Conference on Computer Communications (IEEE INFOCOM), 2019.
- 16<sup>th</sup> IEEE Annual Consumer Communications & Networking Conference (CCNC 2019).
- 16<sup>th</sup> 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).
- 27<sup>th</sup> 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**

- 
- Session Chair, IEEE COINS: IEEE International Conference on Omni-layer Intelligent systems, Tutorial on Challenges and Solutions for Flight Duration Enhancement in UAV Wireless Networks, 2021.
- Session Chair, 53th Asilomar Conference on Signals, Systems and Computers (Asilomar'20).
- Judge for Poster and Demo Session, IEEE International Conference on Sensing, Communication and Networking (**IEEE SECON 19**).
- Session Chair, IEEE International Symposium on a World of Wireless, Mobile and Multimedia Networks (WoWMoM) 2020.
- 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 Transactions on Communications,
- IEEE Vehicular Technology Magazine,
- IEEE Communications Magazine,
- IEEE Transactions on Vehicular Technology,
- IEEE Transactions of Automatic Control,
- Expert Systems With Applications
- Elsevier Digital Communications and Networks,
- Elsevier Computer Methods and Programs in Biomedicine,
- IEEE Journal of Biomedical and Health Informatics,
- IEEE Journal on Miniaturization for Air and Space Systems,
- BMC Informatics and Decision Making,
- Elsevier Computers & Security Journal,
- Elsevier Ad Hoc Networks
- Journal of Communications and Networks,
- IET Communications Journal,
- 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 Clemson University:**

Clemson University Experimental Forest University Users Group (2022 - present)

**Service to Northern Arizona University:**

- Program Chair to establish a Bachelor Degree in Cyber-engineering (Spring 2020 - present)
- Chair, Electrical Engineering Curriculum Committee (Fall 2019 - 2020)
- PhD Program Admission Committee, Electrical Engineering Program, 2020.
- Chair, search committee for a non-tenure track faculty in electrical engineering, Fall 19-Spring 2020.
- Search committee for a tenure-track faculty in Cyber Security, Spring 2020.
- 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 (*N<sup>2</sup>Women*),