

Curriculum Vitae

Brian T. Kelley, Ph.D. Associate Professor of ECE

College of Engineering

Department of Electrical Engineering

University of Texas at San Antonio (UTSA)

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Tenured Associate Professor of Electrical and Computer Engineering, UTSA, 2007-present

Department of Electrical & Computer Engineering, Univ. of Texas at San Antonio (UTSA)³

Director of the Wireless Next Generation Systems (WINGS) Lab at UTSA and recipient of over \$3.6 M in academic research funding

Current research focus OFDM-A based 5G systems, Radio Access Networks (RAN), Open-Source 5G, O-RAN, 5G MANO, 5G NFV, and 3GPP 5G Stand Alone Core Systems

Graduate level courses in Software Defined Radio, Internet of Things (IoT), Foundations of Communications, 4G, and 5G Wireless Communications

Assistant Associate Dean's Fellow UTSA

Principal Investigator for JBSA 5G Program Management Team , 2020-present

Reporting to the Office of the Undersecretary of Defense, R&E^{1,2}

Principal Investigator 5G Telemedicine Program²

Principal Investigator for JBSA 5G Program Management Office, 2020-2022

Reporting to the Office of the Undersecretary of Defense, R&E^{1,2}

Principal Investigator 5G Core Capabilities & Security Program¹

Principal Investigator 5G Telemedicine Program²

a. Educational Background

Cornell University College of Engineering, Ithaca, NY

BS Elec. Eng. 1983-1987

Major: Communication systems, signal Processing

Minor: Premed studies

Selected for prestigious Kodak Scholarship (3/4 Tuition): 1984-1987

Graduated Tau Beta Pi, Eta Kappa Nu from Cornell

Georgia Institute of Technology, Atlanta, GA

Electrical Engineering Ph.D. 1992

Systems Communications, DSP, Comp. Eng.

Presidential Fellow of Georgia Tech

Georgia Institute of Technology Thesis Advisor: Vijay K. Madiseti (Ph.D. UC Berkeley)

Georgia Institute of Technology, Atlanta, GA

Electrical Engineering M.S. 1987-1989

DSP and Computer-Engineering, Math Minor,

Research Assistant (RA) (1992)

Office of Naval Research Fellow (1987-1991)

Presidential Fellow of Georgia Tech (1987-1991)

b1. Professional Employment History (Academic)

University of Texas at San Antonio, San Antonio, TX (2007-Present)

OVERALL, UTSA RESEARCH PROFILE:

Associate Professor of Electrical and Computer Engineering

Director of the Wireless Information and Next Generation Systems (WINGS) Lab



Knowledge leader, Core research includes 3GPP 5G New Radio (5G-NR) core network, MAC, and Layer 1, the intersection of cloud computing and wireless communications, advanced software modeling, software defined radio, Internet of Things (IoT) and quantum communications.

Academic Research Focus

–6G, 5G-NR Cellular Communication Networks, 5G Core Networks

– Open-Source Software for 5G Communications, O-RAN, Software Defined Radio (SDR)

– Physical Layer Security, 6G communication and AI/Machine Learning on 6G

Principal Investigation Support for 5G Core & Security and 5G Telemedicine: JBSA 5G/OUUSD R&E

Principal investigation for two major programs: PI for 5G Core Capabilities & Security Program¹ and PI for 5G Telemedicine Program²: Providing technical leadership, scientific and engineering expertise for studying, researching, planning, developing, testing, and evaluating 5G systems and networks, 5G core technologies, 5G cyber security technologies, 5G telemedicine technologies and 5G learning systems. The contractor shall provide technical leadership across the entire spectrum of research, development, test, and evaluation (RDT&E) for JBSA 5G NextGen programs and projects, including strategic technology planning for 5G MILCOM and 5G in telemedicine and training.

Technical Leadership: Working with the JBSA 5G Executive Program Manager and subject matter experts (SMEs), the contractor shall provide technical leadership and oversight to ensure that project

technical goals and schedules are achieved. The contractor shall oversee internal and contracted R&D projects to ensure that projects remain focused on meeting the JBSA 5G program goals and objectives and that work performed is to JBSA's program standards. Assessing, evaluating, and reporting the technical performance for all JBSA 5G initiatives and work with the JBSA 5G Executive Program Manager to initiate corrective action for identified deficiencies. Generating technical documentation required to backup and support corrective actions as required.

Department of Defense Sabbatical Employee, San Antonio, TX (Sept. 2015-September 2016)

Top Secret Security Clearance Active from 8/20/2015-8/20/2016

Classified Research with the Department of Defense, Fort Meade, Washington D.C.

Oak Ridge National Laboratory (ORNL) Summer Research Faculty Fellow, Summer 2017: selected to consult with Quantum Information Systems group: Conducted Research in Quantum Digital Signature, Knoxville, TN

Oak Ridge National Laboratory (ORNL) Summer Research Faculty Fellow, Summer 2015: selected to by two separate groups at ORNL to server as a summer research consult

Group 1: Quantum Information Systems applied to Smart Grid Security

Group 2: High Performance Computing (Super Computing), Knoxville, TN

Oak Ridge National Laboratory (ORNL) Summer Research Faculty Fellow, Summer 2011: Consulted with the Sensor Device Group of ORNL. Pursued research in adapting 4G Radio Location to GPS Denied Environment with Adaptive Performance, Oak Ride, TN.

Office of Naval Research

ONR Summer Research Faculty Fellow, Naval Undersea Warfare Center (NUWC): Summer 2012 & Summer 2013

Conducted joint research with the Navy in broadband underwater communication, Newport, Rhode Island. Developed algorithm for communication of RF signals Underwater

University of Texas at Austin, Austin

Adjunct Associate Professor, University of Texas at Austin in ECE: (2000-2007)

Affiliated with the Communication Group at UT Austin in ECE

Instructor for Graduate level courses in Statistical Signal Processing,

Instructor for Undergraduate level courses in Communications, Signals and Systems

B2. Professional Employment History (Industrial R&D)

Rampart Communications, Commercial High Technology Start-up Company

Crownsville, Maryland: Collaborating with Startup Company, Rampart Communications, with HQ in Maryland. on new communication technology venture. Participated in I-Corps at UTSA with the corporate CEO of Rampart and technical guidance (2017-present)

Freescal (Launched by Motorola):

Distinguished Member of the Technical Staff, Engineering Manager (2004-2006)

Wireless Mobile System Group, Advanced Technology Organization, Engineering Staff

1. Freescal's lead representative at the 3GPP Radio Access Network (RAN4) conferences for next generation cellular system development (traveled to Shanghai, Tallin, Riga, and Soeul) developing next generation 3GPP standards for 3.5GHSPA/4GLTE
2. Engineering manager engineering R&D team for 802.11 platform systems
 - a. Lead teams in the development of end-to-end link level and system level simulators in using Matlab classes and object oriented programming for High Speed Packet Access (3.5G). Systems including both uplink HSDPA and downlink HSUPA link level and system level modeling.
 - b. Algorithm development for HSPA interference cancellation, chip-level equalization, Rx and Tx diversity, and MIMO

Motorola

Engineering Manager and Distinguished Member of the Technical Staff, 1998-2003

Wireless Mobile System Group, Advanced Technology Organization, Boynton Beach, FL and

Austin, TX; led a cross-corporate effort to develop a Software Definable Radio (SDR) wireless modem System on a Chip (SoC) for all current and emerging 3G wireless communication standards: 3GPP WCDMA (FDD, TDD), CDMA2000, 1XEV-DO, 1XEV-DV, EDGE. My team of the 10 elite engineers across the company developed software defined radio (SDR) technology to support all the cellular communication standards. Motorola R&D Principle Staff Engineer and lead system architect for paging platforms, 1996-1997

My team developed the first digital paging platform system for Motorola based upon new Sigma-Delta technology.

Motorola R&D Senior Staff Engineer Digital Signal Processing Group, 1993-1995

DSP processor development, algorithm design, speech vocoders, software development

C. Awards and Honors

RESEARCH PROFILE:

1. National Science Foundation REU program, UTSA
2. Principal Investigator in 5G Core Capabilities and Security and 5G Telemedicine by the Office of the Undersecretary of Defense R&E (OUSD R&E) and the JBSA 5G Program Management Office (PMO)
3. 5G Expert: Appeared on Texas Public Radio (Host: David Martin Davies) to discuss the

- Challenges and Opportunities of 5G Integration in San Antonio, December 19", 2019
4. Selected as Assistant-Associate Deans Fellow by College of Engineering at UTSA 2019- 2020
 5. Selected by Oak Ridge National Laboratory (ORNL) Quantum Information System Group as Summer Research Faculty Fellow, Summer 2017, Knoxville, TN
 6. Selected by Department of Defense (DoD), Washington D.C. as a yearlong Sabbatical Employee with the National Security Agency (NSA), 1 Year: 2015-2016.
 - a. Held Top Level Security Clearance
 7. Selected by two groups at Oak Ridge National Laboratory (ORNL) for a joint Summer Research Faculty Fellow: Quantum Information System Group and High Performance Computing (Super Computing), Summer of 2015, Knoxville, TN
 8. Selected by Office of Naval Research as Summer Research Faculty Fellow, Naval Undersea Warfare Center, Newport, Rhode Island Summer 2013
 9. Selected by Office of Naval Research as Summer Research Faculty Fellow, Naval Undersea Warfare Center, Newport, Rhode Island Summer 2012
 10. Selected by Oak Ridge National Laboratory (ORNL Sensor Device Group as Summer Research Faculty Fellow, Summer 2011, Knoxville, TN
 11. 2006: Senior Member of the IEEE, 2006
 12. 2004: Engineer of the Year Award: Modern-Day Technology Leader, Modern-Day Technology Leader, Career Communication Group.
 13. Nominated to Motorola MIMS Global Organizational Leadership Development (GOLD): Leadership Program for Global Org.: I was selected as one of the top 100 leaders within the company to participate in a Global Organizational and Leadership Development within Motorola. My team traveled to Czech Republic, Latvia, Estonia, Malaysia, and San Francisco fore executive training in global organizational development, 1999
 14. Dartmouth Post-Doctoral candidate at Thayer Engineering School, 1993
 15. Office of Naval Research Fellow Georgia Tech, Georgia Institute of Technology, 1987-1991
 16. Presidential Fellow of Georgia Tech, Georgia Institute of Technology, 1987-1991
 17. Tau Beta Pi Cornell University College of Engineering
 18. Eta Kappa Nu, Cornell University College of Engineering
 19. Certified Toastmaster, Publics Speaking and Leadership training, Toastmaster International

D1. Research, Scholarly Activities Summary: BOOK CHAPTERS

John Prevost, Kranthimanoj Nagothu, Mo Jamshidi, **Brian Kelley**, "Energy Aware Load Prediction for Cloud Data Centers," Control and System Engineering, Volume 27 of the series Studies in Systems, Decision and Control, pp 153-174, Springer Verlag, 2015.

Brian Kelley, "Software Defined Radio for Advance Gigabit Cellular Systems," DSP Handbook/Wireless, Networking, Radar, Sensor Array Processing, and Nonlinear Signal

Processing, Chapter 22, 2009

Kelley, B.T. and Madiseti, V.K., “*Optimal Concurrent VLSI Architectures for 2-D Transposition*”, Advance Research in VLSI, (Editor: Carlo Sequin), MIT Press, pp. 290-306, March 1991.

D2. Research, Scholarly Activities Summary: Refereed Conference Papers

1. Israt Ara and **Brian Kelley**, “An Intelligent and Private Air Interface for 6G O-RAN,” submitted to the 2022 IEEE Conference on Standards for Communications and Networking (CSCN), Nov. 2022
2. Mohammad Alamgir and **Brian Kelley**, “*Fixed Wing UAV-based Non-Terrestrial Networks for 5G mmWave Connected Vehicles*,” submitted to the 2022 IEEE Conference on Standards for Communications and Networking (CSCN), Nov. 2022.
3. **Brian Kelley** and Israt Ara, “*An Intelligent and Private 6G Air Interface Using Physical Layer Security*,” p. 1-6, IEEE MILCOM, Nov. 2022.
4. Gerardo Trevino , **Brian Kelley**, Ph.D. , Patrick Benavidez, Ph.D. , Matt Kuhfahl, Richard Gonzales, Paul Young, MD, and Patricia Geppert, Ph.D. “Telemedicine Edge Computing Applications Over 5G Standalone,” submitted to IEEE Globecom, Dec. 2022.
5. Gerardo Trevino , **Brian Kelley**, Ph.D. , Patrick Benavidez, Ph.D. , Matt Kuhfahl, Richard Gonzales, Eli Tarang, Clarence Huff, Neal Pandeya, and Bharat Agarwal, “*Open Source Private 5G Stand Alone Systems and Applications With MANO*,” submitted to IEEE MILCOM, Nov. 2022.
6. Brian Kelley, Ph.D., Israt Ara, “*An Intelligent and Private 6G Air Interface Using Physical Layer Security*,” accepted for publication, IEEE MILCOM, Nov. 2022.
7. Patrick Benavidez, Ph.D. , Roberto Sanoval, Ph.D. Brian Kelley, Ph.D. , Matt Kuhfahl, Richard Gonzales, “*On the Integration of Zero Trust to Enhance 5G Operational Security*,” submitted to IEEE MILCOM, Nov. 2022.
8. Brian Kelley, Ph.D., Taylor Eisman, “*End-To-End Private 5G Systems Using MANO and Open-Source 5G Cores*,” submitted for publication, IEEE MILCOM, Nov. 2022.
9. B. Kelley, etal. “Medical Device Innovation Consortium, 5G Landscape Analysis,” URL:
<https://assets.adobe.com/id/urn:aaid:sc:US:f0f28b20-a777-4fe5-bc0e-64d9286dcb8f?view=published>
10. B. Kelley, Ettus Research, JHUAPL, IEEE MILCOM 2022 Workshop Chair on “5G Military Communications: Open Modular Architectures, Testbeds, and Cybersecurity,” Accepted by IEEE MILCOM, Rockville, MD, Nov 28, 2022.
11. **B. Kelley**, A. Yerrapragada, T. Eisman, “AI-Based Physical Layer Security Processing for 6G Privacy,” NVIDIA, GTC 21, April 12, 2021.
12. **B. Kelley**, K. Kockelman, J. Wang, “Integrating Automated Vehicles with 5G Networks to Realize the Future of Transportation,” Day One Project, June 2021, URL: <https://9381c384->

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62bbf54449a6.filesusr.com/ugd/14d834_52c00a291c724d378f406f0be5742655.pdf (visited on 06/21/2021)

13. T. Ngo, **B. Kelley**, P. Rad, “Deep Learning Based Prediction of Channel Profile for LTE and 5G Systems” Pending, APWiMob 2021, Asia Pacific Conference on Wireless and Mobile
14. T. Ngo, **B. Kelley**, P. Rad, (Best Student Paper Award) “Deep Learning Based Prediction of Doppler Shift in Mobile Communications” Accepted, COMSNETS 2021, 13th International Conference on COMMunication Systems & NETworks, Feb 12, 2021.
15. T. Ngo, **B. Kelley**, P. Rad, “Deep Learning for Signal Processing with Predictions of Channel Profile, Doppler Shift and Signal-To-Noise Ratio,” WINCOM’20, The 8th International Conference on Wireless Networks and Mobile Communications
16. T. Ngo, **B. Kelley**, P. Rad, “Deep Learning Based Prediction of SNR for LTE and 5G Systems,” WINCOM’20, The 8th International Conference on Wireless Networks and Mobile Communications
17. T. Ngo, **B. Kelley**, P. Rad, “SNR Prediction Using Multiple CNNs,” ICWTS – International Conference on Wireless Telecommunications Systems, 2020
18. Think Ngo, Paul Rad and **Brian Kelley**, “SNR Classification Using Multiple CNNs,” accepted for publication ICWTS 2020: International Conference on Wireless Telecommunications Systems, " Jan 30-31, 2020 in New York, USA. (Received Best Paper Award)
19. Anil Kumar Yerrapragada, Patrick Ormond, and **Brian T. Kelley**, “On the Application of Key-Based Physical Layer Security in 5G Heterogeneous Networks,” Accepted 2019 IEE Military Communications Conference (MILCOM), pp. 1-6, Norfolk, VA, 2019.
20. Anil Kumar Yerrapragada, Patrick Ormond, and **Brian T. Kelley**, “Very High Throughput Internet of Thing Networks with K-Access Point and K-Devices,” Accepted 2019 IEEE Military Communications Conference (MILCOM), pp. 1-6, Norfolk, VA, 2019.
21. Anil Kumar Yerrapragada and **Brian T. Kelley**, “Very High Throughput K-User MIMO with Network Scheduling for Industrial IoT,” 14th Annual, 2019 System of System Engineering Conference (SoC), pp.1-6, Anchorage, Alaska, 2019.
22. Patrick Ormond, Anil Kumar Yerrapragada and **Brian T. Kelley**, “On the Application of MIMO Space-Time Coding to Physical Layer Security in sub-6 GHz 5G,” 14th Annual, 2019 System of System Engineering Conference (SoC), pp.1-6, Anchorage, Alaska, 2019.
23. Patrick Ormond, Anil Kumar Yerrapragada and **Brian T. Kelley**, “Error Rate Analysis of Physical Layer Security for Sub-6 GHz 5G Network Planning,” 14th Annual, 2019 System of System Engineering Conference (SoC), pp.1-6, Anchorage, Alaska, 2019.
24. Niloofar Bahadori, Nima Namvar, **Brian Kelley**, Abdollah Homaifar , “Device-to-Device Communications in Millimeter Wave Band: Impact of Beam Alignment Error,” (WTS), pp. 1-6, May 2019.

25. A. Yerrapragada and **B. Kelley**, “Very High Throughput K-User MIMO Network Scheduling for Industrial IoT,” submitted to the IEEE Wireless Communications and Networking Conference, pp.1-6, Marrakech, Morocco, 2019.
26. Niloofar Bahadori, Nima Namvar, **Brian Kelley**, Abdollah Homaifar, “ Device-to-device communications in the millimeter wave band: A novel distributed mechanism,” 2018 Wireless Telecommunications Symposium (WTS), pp. 1-6, May 2018.
27. Omkar Paranjape and **Brian Kelley**, Cognitive Self Organization of Networks Optimized for Bulk File Transfers, “International Conference on Advanced Trends in Engineering (ICATE 2018)”, September 2018.
28. Anil Kumar Yerrapragada and **Brian Kelley**, “Design of K-user Massive MIMO Networks,” The 8th IEEE Annual Ubiquitous Computing, Electronics & Mobile Communication Conference, IEEE UEMCON 2017, accepted for publication, September, 2017.
29. A. Yerrapragada and **B. Kelley**, “An IoT Self Organizing Network for 5G Dense Network Interference Alignment,” 2017 12th Annual System of Systems Engineering Conference (SoSE), Waikoloa, Hawaii, pp. 1–6, IEEE, 2017.
30. **Brian Kelley**, Jeff Prevost, Aqsa Fatima, “Securing Cloud Containers Using Quantum Networking Channels,” 2016 IEEE SmartCloud, Nov. 2016, pp 103-111.
31. Nima Namvar, Walid Saad, Niloofar Bahadori, **Brian T Kelley**, “Jamming in the Internet of Things: A Game-Theoretic Perspective,” 2016 IEEE Globecom, Dec. 2016, pp. 1-6.
32. Xue Qin, **Brian Kelley**, and Mahdy Saedy, “A Fast Map-Reduce Algorithm for Burst Errors in Data Cloud Storage, 2015 10th System of System Engineering Conference (SoC), pp. 398-403, 2015
33. **Brian Kelley**, Gonzalo De La Torre Parra, and David Akopian, “Cognitive Interference Avoidance in 4th Generation GPS,” 10th System of System Engineering Conference (SoC), pp. 410-415.
34. **Brian Kelley** and Krisha Naishadham, “High Data Rate Undersea Broadband Radio-Frequency Communications”, 2014 IEEE International Symposium on Antennas and Propagation and USNC-URSI Radio Science, Memphis, TN.
35. **Brian Kelley**, A Power Quality of Service Theory Enabling Uninterruptable Operation of Microgrids, Texas Energy Summit, Austin Tx, Nov 11-13th.
36. Kranthi Manoj, **Brian Kelley**, and Mo Jamshidi, “MIMO-Interference Aware Scheduling Enabling the Allocation of Unbounded Co-channels in Unplanned Networks,” 2013 IEEE Systems Conference, IEEE SysCon, pp. 1-6, 2013.
37. Amir Rajaei, Kranthi Manoj, **Brian Kelley**, and Mo Jamshidi, “Interference Aware Scheduling for Maximum Channel Reuse and Max-Capacity in Smart Meter Networks,” accepted by the IEEE 2013 International Conference on Computing, Networking and Communications (ICNC) Workshop on Computing, Networking and Communications, pp. 1-

5, January, 2013.

38. Krishna Naishadham and **Brian Kelley**, "RF Multicarrier Signaling and Antennas Systems for Low SNR Broadband Underwater Communications," *2013 IEEE Radio and Wireless Conference, January 2013*, pp. 1-3.
39. Yashar Sahraei Manjili, Amir Rajae, Mo Jamshidi, **Brian Kelley**, "Intelligent Decision Making for Energy Management in Microgrids with Air Pollution Reduction Policy," 2012 7th International Conference on System of Systems Engineering, pp. 1-6, July 2012.
40. Yashar Sahraei Manjili, Amir Rajae, Mo Jamshidi, **Brian Kelley**, "Fuzzy Control of Electricity Storage Unit for Energy Management of Micro-Grids", WAC 2012, Italy, pp. 1-6, June, 2012.
41. Jeff Prevost, Kranthi Manoj, **Brian Kelley**, Mo Jamshidi, "Load Prediction Algorithm for Multi-Tenant Virtual Machine Environments" WAC Conference 2012, Italy.
42. Kranthi Manoj Nagothu, **Brian Kelley**, Sekchin Chang, and Mo Jamshidi, "Cloud System Architecture for Metropolitan Area Based Cognitive Radio Networks," Systems Conference (SysCon), 2012 IEEE Systems Conference January, pp. 1-6, March 2012.
43. Mahdy Saedy and **Brian Kelley**, "Consensus-Based Cognitive Radio Assisted Cooperative Communications," 2011 Proceedings of the 9th ACM international symposium on Mobility management and wireless access, MobiWac '11, Miami, FL., pp. 153-158.
44. Yashar Sahraei Manjili, Amir Rajae, **Brian Kelley**, Mo Jamshidi, "Fuzzy-Logic Based Control for Battery Management in Micro-Grid" 2011 Research Conference, College of Science at UTSA, Awarded as Best Student Poster.
45. Kranthi Manoj Nagothu, **Brian Kelley**, Jeff Prevost, "On Prediction to Dynamically Assign Heterogeneous Microprocessors to the Minimum Joint Power State to Achieve Ultra Low Power Cloud Computing," IEEE Asilomar Conference, pp. 1269-1273, Nov. 2010.
46. Jeff Prevost, Kranthi Maoj Nagotu, **Brian Kelley**, Mo Jamshidi, "Prediction of Cloud Data Center Network Loads Using Stochastic and Neural Models," 6th International Conference, on System of Systems Engineering (SoSE), pp. 276-281, June, 2011.
47. Kranthi Manoj, **Brian Kelley**, Jeff Prevost, "Ultra Low Energy Cloud Computing Using Adaptive Load Prediction," 2010 World Automation Congress (WAC), pp. 1-7, 2010.
48. **Brian Kelley**, "Software Defined Radio for Broadband OFDM Protocols," 2009 Systems, Man and Cybernetics (SMC), pp. 2309-2314, San Antonio, 2009
49. **Brian Kelley** and Kranthi Manoj, "Broadband RF Communications in Underwater Environments Using Multi-carrier Modulation," 2009 Systems, Man and Cybernetics (SMC), San Antonio, pp. 2303-2308, 2009.
50. **Brian Kelley** and Ed Rivas, "OFDM Location-Based Routing Protocols in Ad-Hoc Networks," IEEE Wireless Hive Conference, pp. 1-5, Austin, TX, 2008.
51. **Kelley, B.T.** "Jointly Optimized Software Radios for Low Power 4G Cellular Systems," November, 2007 Proceedings of the Asilomar Conference on Signals, Systems, and Computers, Pacific Grove, CA, pp. 113-117, 2007.

52. Chang, S., and **Kelley, B.T.**, “ Time Synchronization for OFDM-based WLAN Systems”, June 2003, IEE Electronic Letter, Vol 39, No. 13.
53. **Kelley, B.T.**, “*On Rapid Prototyping and Design of a Wireless Communication SoC*— Delivered Conference Invited Talk”, 1999 IEEE ICCAD/ISSS conference, San Jose, CA.
54. **Kelley, B.T.**, Johnson, D., "Design Automation of a Receiver: Breaking the RTL Cycle Time Barrier Using (Synopsys) Behavioral Compiler", DesignCon98-BEST PAPER AWARD WINNER, 1998.
55. **Kelley, B.T.** “*Virtual Bandwidth Digital Receiver Conversion Signal Processor*”, *Motorola Technical Developments* Volume 33, pp. 65-68, December 1997.
56. **Kelley, B.T.**, “*On the IC Architecture and Design of the Magellan Low Power Digital Receiver for Two-Way Paging*”, MOTOROLA 1996 War on Current Drain Symposium, Tempe, AZ.
57. **Kelley, B.T.**, and Madiseti V.K., “*The Discrete Fast Radon Transform (FRT)*”, IEEE 1992 International Conference on Acoustics, Speech, and Signal Processing, Vol. 5, pp. 3219-3222, San Francisco, CA.
58. **Kelley, B.T.** and Madiseti V.K., “*High Speed Migration of Multidimensional Seismic Data*”, IEEE 1991 International Conference on Acoustics, Speech, and Signal Processing, pp. 1117-1120, Toronto, Canada.

D3. Research, Scholarly Activities Summary: Refereed Publications in Journals

1. Anil Kumar Yerrapragada, **Brian Kelley**, T. Eisman, “Physical Layer Security for Beyond 5G: Ultra Secure Low Latency Communications,” IEEE Open Journal of the Communications Society, August 2021, pp. 1-11
2. Yerrapragada, Anil Kumar and **Kelley, Brian**, “On the Application of K-User MIMO for 6G Enhanced Mobile Broadband,” Sensor Journal, Vol. 20., No 2, pp. 1-16, Multidisciplinary Digital Publishing Institute,, Nov 1, 2020, <https://doi.org/10.3390/s20216252>.
3. N. Bahadori, M. Nabil, **B. Kelley**, and A. Homaifar, “Enabling Content-Centric Device-to-Device Communication in the Millimeter-Wave Band,” IEEE Trans. on Mobile Comput., pp. 1–1, 2021, doi: 10.1109/TMC.2021.3071468.
4. A. Yerrapragada, Patrick Ormond, and **B. Kelley** On the Application of Physical Layer Security to 5G Internet of Things, submitted to the IEEE Transactions on Wireless Communications, pp. 1-25, Jan 20 2019.
5. A. Yerrapragada and **B. Kelley**, “On the Application of K-User MIMO for Very High Throughput IoT Networks,” submitted to IEEE Transactions on Communication, Nov. 2018, pp. 1-29.
6. Sekchin Chang, Kranthimanoj Nagothu, **Brian Kelley**, Mo Jamshidi, “A Beamforming Approach to Smart Grid Systems based on Cloud Cognitive Radio,” IEEE System Journal, Vol. 8, No. 2, June 2014.

7. Jackseário António Dionísio do Rosário and **Brian Kelley**, “A Power Quality of Service Theory Enabling Stochastic Optimization of Microgrids,” IEEE System Journal, Dec. 2013.
8. John J. Prevost, Kranthimanoj Nagothu, Mo Jamshidi, and **Brian Kelley**, “Energy Aware Load Prediction for Cloud Data Centers,” IEEE System Journal, Nov. 2013.
9. Mahdy Saedy and **Brian Kelley**, “Distributed Synchronization for Indefinitely Scalable 4G Wireless Sensor Networks,” IEEE System Journal, *October, 2012, pp 1-17.*
10. Mahdy Saedy and **Brian Kelley**, “Consensus-Based Cooperative Communications for Clustered Mobile Wireless Sensor-Actuator Networks,” International Journal of Mobile Network Design and Innovation (IJMNDI) Special Issue on: "Adaptation and Clustering in Mobile Networks", Volume 4, Issue 1, pp. 4-46, March 2012.
11. Mahdy Saedy and **Brian Kelley**, “On the Foundations of Ultra-Low Power Scale Free Sensor Networks for Cluster to Cluster Communications, IEEE Transactions on Sensor Networks, Vol. 12, No. 9, pp. 2881-2890, September, 2012.
12. Kranthi Manoj Nagothu, **Brian Kelley**, Mo Jamshidi, “Persistent Net-AMI for Microgrid Infrastructure Using Cognitive Radio on Cloud Data Centers,” IEEE System Journal, March 2012, Vol. 6, Issue 1, pp. 4-15.
13. Amir Rajae, Mahdy Saedy, and **Brian Kelley** " A Complete Spectrum Sensing and Sharing Model for Cognitive Radio Ad Hoc Wireless Networks Using Markov Chain State Machine" International Journal of Interdisciplinary Telecommunications and Networking (IJITN), Volume: 3, Issue: 3, Pages: 15-28, 2011.
14. **Brian Kelley**, “Massively Parallel Cooperative Localization in Scalable Sensor Networks,” Int. J. of Communication Networks and Distributed System (IJCNDS), Vol. 7, pp. 81-100, June, 2011.
15. Sekchin Chang, **Brian Kelley**, “An Efficient Time Synchronization Scheme for Broadband Two-Way Relaying Networks Based on Physical-Layer Network Coding,” IEEE Communication Letters. Vol. 16, No. 9, September 2012.
16. Sekchin Chang and **Brian Kelley**, “A Time-Domain SNR Estimator based on a Periodic Preamble for Wireless OFDM Systems,” IEICE Electronics Express, Vol. 8, No. 24, pp. 2073-2079, December, 2011.
17. Chang, S., and **Kelley, B.T.**, “ Time Synchronization for OFDM-based WLAN Systems”, June 2003, IEE Electronic Letter, Vol. 39, No. 13, pp1416-1419, .
18. **Kelley, B.T.** and Madisetti, V.K. “The Fast Discrete Radon Transform”, IEEE Transactions on Image Processing, Vol. 2, No. 3, pp. 382-400, July 1993.
19. **Kelley, B.T.** and Madisetti V.K., “Efficient VLSI Architectures for the 1-D and 2-D Arithmetic Fourier Transform (AFT)”, IEEE Transactions on Signal Processing, Vol. 41, No. 1, pp. 365-384, January, 1993.

E. Scholarly Presentations

Non-Refereed Abstracts

1. **B. Kelley** and Khristine Farmer, “Joint Base San Antonio (JBSA), 5G Telemedicine and Medical Training Industry Day,” January 28, 2021.
<https://apps.dtic.mil/sti/citations/AD1122735>
2. **B. Kelley** and J. Little, JBSA 5G PMO presentation to the IEEE Lone Star Section, May 26, 2021.
3. **B. Kelley**, Overview of the Joint Base San Antonio (JBSA) 5G NextGen presented, IEEE Lone Star Section, SwRI, May 28, 2021
4. **B. Kelley**, Invited Speaker, “5G Network Slicing,” JBSA 5G PMO, July 13, 2022.
5. **B. Kelley**, Invited Speaker, “Introduction to 5G,” Department of Defense at Fort Sam Houston, August 9, 2022.
6. **Dr. Kelley**, “Identifying Ways to Improve the Expression of Need between the Public and Private Sectors to Move towards Zero Trust,” Billington Cybersecurity Summit September 8 2022.
7. **B. Kelley**, The Thirteenth International Conference on Evolving Internet, Internet 2021, June 24, June 25th, 2021
8. **B. Kelley**, Guest Speaker, 5GG Physical Layer Security **Georgia Institute of Technology Cyber Security Lecture Series (80 Ph.D.s), Jan 21, 2021.**
9. **B. Kelley**, Invited Talk, JBSA 5G Use Cases, “DARPA Open Programmable Secure 5G (OPS-5G) program,” August 23, 2022.
10. **B. Kelley**, “ADVANCED WIRELESS RESEARCH IN TEXAS”, Invited Talk, Wireless Communication and Networking Conference (WCNC) in Austin TX, April 12, 2022
11. **B. Kelley**, Invited Speaker, “Electromagnetic Defense Initiative Quarterly: 5G,” Tech Port Center, San Antonio, June 10, 2022, October 2022.
12. 6G@UT Forum Participation
13. **B. Kelley**, P. Young, and P. Geppert, Invited Speaker, “5G Extends Military Medical Expertise to the Operational Edge,” Medical Device Innovation Consortium, MDIC, on Thursday, August 11, 2022
14. **Dr. Kelley** Future Panel, Cybersecurity and the Future of 5G session., Billington Cybersecurity Summit, Washington DC, September 8 2022.
 - <https://governmentciomedia.com/dod-protecting-5g-networks-emerging-security-techniques>
 - <https://billingtoncybersummit.com/agenda/2022-agenda>
15. **B. Kelley**, Invited speaker, “13th Annual Billington CyberSecurity Summit,” filmed in person from September 16-24, 2021 at the Chevy Chase, MD headquarters of Billington CyberSecurity. B. Kelley will present at Breakout Panel #3 - Ensuring Cybersecurity In The Transition To 5G . The conference will occur Oct. 6 - 8, 2021:
<https://billingtoncybersummit.com/>

16. **B. Kelley**, Invited speaker “5G to XG US Defense Symposium,” public-private sector panel, September 23, 2021;
<https://www.interdigital.com/government-solution-events/5g-to-xg-us-defense-symposium>
17. **B. Kelley**, Invited speaker, “12th Annual Billington CyberSecurity Summit,” sessions will be filmed in person from September 16-24, 2021 at the Chevy Chase, MD headquarters of Billington CyberSecurity. Breakout Panel #3 - Ensuring Cybersecurity In The Transition To 5G . The conference will occur Oct. 6 - 8, 2021: <https://billingtoncybersummit.com/>
18. **B. Kelley**, Panel Session Chair, IARIA Conference: Communications of the Future: Hot Topics in Internet, INTERNET 2021, The Thirteenth International Conference on Evolving Internet, Nice, France, July 18, 2021.
19. **B. Kelley**, Breakout Panel #2 - Ensuring Cybersecurity In The Transition To 5G, Billington Cyber Security Summit, September 21, 2021
20. **B. Kelley** presented on 5G Core Capabilities and Security on Friday August 13th to JBSA Senior Leaders and San Antonio Mayor Ron Nirenberg.
21. **B. Kelley**, Taylor Eisman, (S32063): AI-Based Physical Layer Security Processing for 6G Privacy, NVIDIA GTC 2021 Conference, March 25, 2021
22. **Brian Kelley**, Invited Guest Speaker at 2020 INL Security Workshop, 3GPP 5G Security, Presentation, Nov. 17, 2020.
23. **Brian Kelley**, Invited Guest Speaker at 2019 IEEE Conference on Network Function Virtualization and Software Defined Networks (NFV-SDN), Nov 12-14, 2019, Dallas, TX
24. **Brian Kelley**, “5G and Quantum Computing”, presentation to Joint Base San Antonio, UTSA Downtown, San Antonio, TX, May 9, 2019
25. **Brian Kelley**, “5G EMP Resiliency,” 2019 EMP Symposium, San Antonio, TX, Nov 3rd, 2019
26. **Brian Kelley, Anil Kumar, Taylor Eisman**, “Beyond 5G Competition, AFRL Software Defined Radio,” Dayton Ohio, 2018, 2019.
27. **Brian Kelley**, “Universal Software Defined Radio Open Platform: 5G, 4G, WiFi and Advanced Research,” IEEE ComSoc Summer School, National Instruments, July 17, 2019.
28. **Brian Kelley**, Intel Corporation, Austin, TX, “5G Networks In the Age of the Internet of Everything,” Leadership Conference, October, 25th, 2017, Austin, TX.
29. **Brian Kelley**, Intel Corporation, Austin, TX, “Information Security of Bitcoin, Blockchain, and Ethereum Platforms,” March 23, 2018.
30. **Brian Kelley**, “Quantum Information Security of, Blockchain Application Networks, ORNL,” August 2017
31. **Brian Kelley**, “Quantum Digital Security Integration with Blockchaining,” ORNL, Quantum Information Systems Group, August 2017
32. **Brian Kelley**, “Quantum Blockchaining for Secure Network and Information Services,” Summer Faculty Poster Session, August 2017

33. Brian Kelley, “Securing the Cloud, The Need for Quantum Network Security,” The UMBC Cyber Defense Lab, UMBC, April 22nd, 2016.

Refereed Abstracts

1. **Brian Kelley**, Kranthi Manoj, Mo Jamshidi, “Virtual Multi-Standard Base Station Support Using Cloud Data Centers,” BIT’s 1st Annual World Congress of Cloud Computing 2012
2. (CloudCon-2012), World EXPO Center, Dalian, China
3. Gerardo Trevino, Chris Fronda, **Brian Kelley**, Mo Jamshidi, Hari Krishnaswami, and Les Shephard, “Hi-Fi PV: Advanced Data Acquisition to Enable Solar Production Forecasting,” NI Week, August, 2012.
4. **Brian Kelley**, “Methods and Theories for Engineering Scale Free Ad-Hoc Networks,” Decision Making: A Psychophysics Application of Network Science, University of North Texas Conference, January 10-13, 2010.
5. **Brian Kelley** and Mahdy Saedy, “Physical Layer Modeling of 3GPP LTE Spatial
6. Multiplexing,” National Instruments Symposium, National Instruments Week (NI-Week) August 2009, Austin, TX.
7. **Brian Kelley**, Ph.D., “Advanced Wireless Network Control of Autonomous Mobile Systems,” System of Systems Analysis Workshop, Las Cruces, New Mexico, 2009.
8. **Brian Kelley**, Ph.D, “3GPP Long Term Evolution Aspects and Migration to 4G Cellular Systems,” IEEE Radio and Wireless Workshop on 3GPP-LTE, San Diego, CA January, 2009.

F. Granting Activities/Research Awards

PI, 100% Title: Principal Investigation of 5G Core Capability & Security and 5G Telemedicine and Medical Training

\$1,107,805: 10/2020-10/24, # FA8750-18-F-0024 (DoD) Office of the Undersecretary of Defense Research and Engineering (OUSD R&E) and JBSA 5G Program Management Office (PMO) through Radiance Technologies 10/09/20-9/1/24
Technical Research Leader developing a state-of-the-art 5G Standalone Core Network, 5G Core Security, and 5G Telemedicine for two programs within OUSD R&E, for a team of 17 members, including engineering, program management, and consultants.

PI: 100% 5G Testing and Verifications

\$14,999: Southwest Research Institute (SwRI), 6/30/2020-6/3/2021

Co-PI: 20% REU Site: Artificial Intelligence Powered Robotics in 5G Network,

\$404,985: National Science Foundation, 8/26/2020-8/26/2023

Co-PI, 2%, RET Site:, Excellence in Control, Artificial Intelligence, and Robotics Education (E-CARE) for Minority, \$600,000: National Science Foundation, 9/30/2020-9/30/2023

Co-PI: 2%: AI Institute: Planning: AI Research Institute for Human Well-Being (ARISE) Students,

\$499,999: National Science Foundation, 1/30/2020-1/30/2023

Co-PI, 10% IUSE/PFE:RED A&I: Transforming engineering education for student success and career readiness through a portfolio-enhanced curriculum

\$404,985: National Science Foundation, 2/7/2020-2/7/2023

(PI) Beyond 5G Challenge Air Force Research Lab (AFRL), \$2,536.00, 5G Software Defined Radio for Physical Layer Security, 2019-2020

(PI) Office of Naval Research (ONR) N00014-16-R-BA01, Special Notice: N00014-16-R-SN02; Total Amount Awarded: \$239,741, Phase I and II, \$74,286, Phase III: \$164,955

Title: Novel Development of Broadband RF Underwater Communication Techniques in Support of Heterogeneous Underwater Network Technology; Thrust Area 2: Command, Control, and Communications (C3), Phase III funding is pending

Undersea Technologies for Autonomous Detection and Communication; FY16 Long Range BAA: Sept 1, 2016- 2020

(PI) Sabbatical Research Grants (DoD): Mathematical Science Program, DoD, Total Amount Awarded: \$137,000, September 2015-September 2016.

Title: Classified Research

(Co-PI) Department of Defense (DoD), 2015-2020: Testing Evaluation and Control of Heterogeneous Large Systems of Autonomous Vehicles (TECHLAV) : \$80K

Research thrust is Resilient Control and Communications, D2D Communications, and IoT communications systems

(PI) \$1,397,837 Research Grants and Awarded and Managed by Dr. Kelley as Principle Investigator, Department of Energy (DOE), SECO Grant No. RE-AG1-2010, Total Amount, \$1,397,837, "Installation of Distributed Solar Energy Resources at UTSA Campus with Sensor Network Monitoring and Control" smartgrid solar distributed renewable energy with wireless sensor network, smart combiners, smart inverters, data loggers, controllers, network communications, and database storage on servers; March 2010-June 2012. I received accommodation from SECO for the research and management effort.

(PI) \$1,005,000 Department of Energy (DOE), SECO Grant No. *DE-EE0000116*, Total Amount, \$1,005,000 “Distributed Solar Energy Deployment at UTSA Downtown Campus: Building Distribution, Vehicle Electrification, and Remote monitoring Agency” smartgrid solar distributed renewable energy with wireless sensor network, smart combiners, data loggers, controllers, network communications, and database storage on servers connected to electric vehicle charging stations at the UTSA downtown campus; Jan 2011-June 2012.

(PI) \$15000 Department of Navy, under Georgia Tech Research Institute sub-award, Total Amount: \$15,000 “*Preliminary Investigations of Antennas and Multicarrier Communications Devices Supporting Broadband Underwater RF Communications*”, Feb 2011-Nov. 2011

G1. Intellectual Property

Patent Disclosure

1. Patent Title: Inventors: Brian Kelley and Jacks Rosario, “Power Quality of Service Optimization for Microgrids.” No. 10,211,638 issued on 2/19/2019.
2. Patent Title: Inventors: Brian Kelley and Xue Qin, “Fast Bandwidth Reconstruction of Big Data Sets in a Cloud Computing Environment Using Parallel Map-Reduce Framework.”, patent pending.
3. Patent Title: “Reconfigurable vector-FFT/IFFT, vector-multiplier/divider”: No. 07082451 Inventors: Satish Kulkarni and Brian Kelley
4. Patent Title: “OFDM Frequency Offset Estimation Apparatus and Method”: No. 07787357 Inventors: Sekchin Chang and Brian Kelley
5. Patent Title: “Decorrelating Rake Receiver Apparatus and Method”: No. 7187940 Inventor: Brian Kelley
6. Patent Title: “Method and Apparatus for Adaptively Classifying a Multi-level Signal”: No. 6,198,779, Inventors: David Taubenheim, Brian Kelley, David Johnson
7. Patent Title: “Electronic Circuit and Method for Automatic Frequency Control”: ” No. 6,192,089, Inventors, Jose Corleto, Brian Kelley, and Shareq Rahman
8. Patent Title: “Method and Apparatus for Mixing Signals,” No. 6,233,287 Inventors: Brian Kelley and Luis Bonet
9. Patent Title: “Multiply and Accumulate Circuit,” No. 5847981, Inventors: Brian Kelley and David Johnson
10. Patent Title: “Method and Apparatus Utilizing Simultaneous Memory Reads For Increasing Memory Access Bandwidth in a DSP”: No. 5659695, Inventors: Brian Kelley, Tan Dao.
11. Patent Title: “Method and Apparatus of a DSP Having a Multiplierless Computation Block”: No. 5675822 , Inventor Brian Kelley

H1. Teaching Activities: Courses Taught

14 New Courses Developed at University of Texas

EE 5283 EE5283 5G Systems and Core Networks
 EE 5453 SW Engineering Development in Python, Matlab, and Android
 EE 5283 Internet of Things (IoT) (GRAD), 2016, 2017, 2020
 EE 2423 Network Theory (UGRAD), 2017, 2018
 EE 5283 4G/5G Communication Systems, 2016 (GRAD), 2016, 2018, 2019
 EE 5283 Software Defined Radio (SDR) using Matlab, (GRAD), 2016
 EE4953: Random Processes for Next Generation Wireless (Grad, 3-0), 2012
 EE 5283: 4G Wireless Communications (GRAD), 2007, 2012, 2013
 EE 5373: Wireless Communications (GRAD), 2010
 EE5283: Foundations of Communications (GRAD), 2009, 2010, 2011
 EE5282: Error Correction Codes, Fall 2008, Spring 2010 (GRAD)
 EE4683: Wireless Communications (UGRAD), Spring 2009, Summer 2009
 EE3533: Random Signals and Noise, Spring 2008, Fall 2013 (UGRAD)
 EE 5283: 4G and WiFi Baseband Networks (GRAD) (3-0), 2014
 OTHER Teaching Experience: Adjunct Assoc. Prof, University of Texas at Austin in EE
 EE381K-9: Advanced Digital Signal Processing (Stat signal process.) (GRAD) 2007, 2000
 EE360K Digital Communications (UGRAD), 2006, 2003
 EE313:15125 Linear Signals and Systems (UGRAD) 2002

H2. Teaching Activities: Students Mentored

1. PhD. Anil Kumar Yerrapragada , PhD. Thesis Advisor,” ADVANCED ALGORITHMS FOR SPECTRALLY EFFICIENT AND SECURE 5G-IoT NETWORKS,” UTSA Department of ECE, Dec. 13, 2020.
2. Taylor Eisman, “5G Open Source,” MS Research Project, July 2022.
3. Georges Ngona (Bradley), NSF REU, “Private 5G Systems Using Open-Source Software,” August 2022.
4. PhD. Thanh Ngo, PhD. Thesis Advisor,” Deep Learning for Wireless Signal Parameter Predictions,” UTSA Department of ECE, Nov. 13, 2021.
5. Bryann Alacarn (UTSA), NSF REU, “MAGMO 5G,” August 2021.
6. PhD. Gonzalo De La Torre Parra, PhD. Thesis,” Distributed AI Defense for Cyber Threats on Edge Computing Systems,” UTSA Department of Computer Science, June 2021.
7. Ph.D. Niloofar Bah, Device-to-Device Communication in 5G Wireless Networks, Niloofar Bahadori, North Carolina A&T State University, Department of ECE, May 2021
8. Nima Namvar, Resource Allocation and Network Management in 5G Cellular Network, North Carolina A&T State University, Department of ECE, Nov, 2019.
9. MS Project Research Advisor, Chitambara Murali Krishna Billakurthi, “4G, 5G, WiFi Multiprotocol Software Defined Radio in GNU Radio and C/C++,” Fall 2018-Spring 2019.
10. MS Project Research Advisor, Vinay Doddi, “4G, 5G, WiFi Multiprotocol Software Defined Radio in GNU Radio and Python,” ,” Fall 2018-Spring 2019.
11. MSEE Research Advisor, Patrick Ormond, “On The Communication Performance of

- Precoder Matrix Index Based Physical Layer Security Scheme,” Summer 2018-Spring 2019.
12. Ph.D. Advisor, Thanh Ngo, “5G Network Machine Learning,” Fall 2018-present
 13. Ph.D. Advisor, Anil Kumar, “Physical Layer Software and 5G K-User MIMO,” Summer 2016-present
 14. Ph.D. Advisor, Chintan Chavda, “Quantum Key Distribution,” 2017-2018
 15. MSEE Research Advisor, Taylor Eisman, “Machine Learning for MIMO Communication Protocols,” Summer 2017-present.
 16. MSEE Project Advisor, Aqsa Fatima, “Securing the Cloud Using Quantum Networking Protocols,” Summer 2016.
 17. MSEE Project Advisor, Omkar Paranjape, “Cognitive Self-Organization of Networks Optimized for Bulk File Transfers,” Summer 2016.
 18. MSEE Project Advisor, Anil Kumar, “Software Defined Radio as a Cloud Application,” Summer 2015.
 19. MSEE Project Advisor, Xue Qin, “A Fast Map Reduce Algorithm for Exact-Repair Reconstruction of Big-Data in Cloud Storage,” Nov 2014.
 20. MSEE Project Advisor, Ximeng Zhao, “VITA49 Radio Transport Layer Protocols for a Software Defined Radio Simulator, Fall 2013.
 21. MSEE Thesis Advisor, Hsing-Yu Tsai, “4G-OFDM Transport Protocol Over GNU-Radio Architecture,” Fall 2013
 22. MS EE Thesis Advisor, Jackseário António Dionísio do Rosário, “A Quality of Service Electric Generation Capacity and Stochastic Optimization Theory for Microgrids Utilizing Photovoltaic Sources, Fall 2013
 23. MS EE Thesis Co-Advisor, Amir Rajaei, MSEE, Master’s Thesis entitled “Cognitive Radio Networks: System Optimization and Smart Grid Applications,”
 24. MSEE UT San Antonio, Spring , 2012
 25. P.h.D. Thesis Committee, Jeff Prevost, Ph.D. Doctoral Dissertation , “OPTIMIZATION MODEL FOR LOW ENERGY COMPUTING IN CLOUD”, Ph.D.EE. UT San Antonio, 2013.
 26. PhD EE Co-Advisor, Kranthi Manoj, Ph.D. Candidate, Doctoral Dissertation Title, “A Cloud Based Radio Access Network Layer and Architecture for 4G and Smart Grid , Ph.D. EE UT San Antonio , Spring. 2013, Received UTSA ECE Research award
 27. Recieved UTSA ECE Research award
 28. Ph.D Thesis Advisor, Mahdy Saedy, Ph.D., Doctoral Dissertation Title, “Cooperation and Consensus in Wireless Cluster Communications and Networks,” Ph.D. EE UT San Antonio, Dec. 2012.
 29. P.h.D. Thesis Committee, Pengjun Pan, Ph.D. Doctoral Dissertation Computer Science ,. “Energy-Efficient Secure and Anonymous Communication Protocols for Wireless Sensor Networks,” Ph.D. EE UT San Antonio, Dec. 2011
 30. MS Thesis Committee Patric Benevidez, “Design of a Swarm of Autonomous Ground

- Vehicles for use in Remote Sensing Applications, “ MSEE UT San Antonio, Fall 2010.
31. P.h.D. Thesis Committee, Catalin Lacatus, Ph.D. Doctoral Dissertation , “Distributed Codeword Adaptation and Power Control in Dynamic Wireless Systems”, Ph.D.EE. UT San Antonio, Nov. 2007.
 32. MSEE Thesis Advisor, Hsing-Yu Tsai, “4G-OFDM Transport Protocol Over GNU-Radio Architecture,” Fall 2013
 33. MSEE Project Advisor, Ximeng Zhao, “VITA49 Radio Transport Layer Protocols for a Software Defined Radio Simulator, Fall 2013.
 34. MS EE Thesis Advisor, Jackseário António Dionísio do Rosário, “A Quality of Service Electric Generation Capacity and Stochastic Optimization Theory for Microgrids Utilizing Photovoltaic Sources, Fall 2013
 35. MS EE Thesis Co-Advisor, Amir Rajae, MSEE, Master’s Thesis entitled “Cognitive Radio Networks: System Optimization and Smart Grid Applications,” MSEE UT San Antonio, Spring , 2012
 36. MS Thesis Committee Patric Benevidez, “Design of a Swarm of Autonomous Ground Vehicles for use in Remote Sensing Applications, “ MSEE UT San Antonio, Fall 2010.
 37. MS EE Thesis Advisor, Kranthi Manoj, “Broadband Underwater Communications,” MSEE UT San Antonio, Spring 2009
 38. MSEE Project Advisor, Mitesh Kavaiya, MSEE, MS Project, “Mobile Positioning Methods in Wireless Networks, “MSEE UT San Antonio, December 2009
 39. MSEE Thesis Advisor, Youngjong Han, MS EE Thesis “Iterative Equalization using Message Passing Methods with Channel Shortening.” MSEE UT San Antonio, Fall 2009
 40. MSEE Thesis Advisor, Szu Hao, MSEE Thesis, “Parallel Turbo Decoding,” MSEE UT San Antonio, Fall 2009
 41. MSEE Project Advisor, Sowmya Prasad, “OFDM Radio Location,” MSEE UT San Antonio, Fall 2010.
 42. MSEE Thesis Committee, Gerardo Trevino, “Cyber-Physical Sustainable Energy and Electric Cars,” MSEE UT San Antonio, Spring 2011
 43. MSEE Project Advisor, Martin Gray, MS Project “2x2 Alamout MIMO Using Labview Signal Analyzer/Generator Communications”, MSEE UT San Antonio, Spring 2011
 44. MSEE Thesis Committee ,Srujana Eega, “Masters Thesis Committee” Design and Simulation of a DC Thruster Motor, MSEE UT San Antonio, Spring 2009
 45. Jackseário António Dionísio do Rosário, UTSA Honors College Undergraduate Thesis Advisor, “Design and Optimization of an Electricity Storage Using Redox Flow Technology for Use in Micro-Grids,” Bachelor of Science in Electrical Engineering, With Highest Honors in the Honors College, UT San Antonio, Spring 2011.

H3. Teaching Activities: UTSA Student Organizations Advised

University Advisor to the Tau Beta Pi (TBP) Engineering Honor Society, UTSA Chapter, 2018-

present

University Advisor to the National Society of Black Engineers (NSBE), UTSA Chapter 2008-2014

II. Service Activities: UTSA

Academic Service at the University of

Texas University Level

November-January CS Faculty Search for UTSA, 2021-2022

Member, Inclusive Excellence Advisory Board, 2019-present

Member, Search Committee, Vice President for Research; Economic Development and Knowledge Enterprise, 2019

Chair, Quantum Information and Computing Faculty Cluster Hiring Committee, 2019

College of Engineering Representative to the Core Curriculum Committee: 2014-2015

College of Engineering Representative to the Diversity and Inclusion Committee: 2016-2018

Black Faculty and Staff Association: 2007-present (Currently Officer Position, Treasurer)

College Level

Diversity and Inclusion Committee (DIAC): 2016-present (Currently Chair)

College Executive Advisor Committee (CEAC): 2017-present

2011-2012: Hosted visiting researcher Dr. Sekchin Chang in my UTSA WiNGS lab during his sabbatical: (Ph.D. UT-Austin, Currently Assoc. Professor and Dept. Chair in ECE at Univ. of Seoul at South Korea)

Member of Texas Sustainable Energy Research Institute in smart grids and lead investigator in on-campus Solar generation test-beds: 2009-2014

ECE Department Scholarship Committee (Previous Chair)

Department Level

ECE Department DFRAC

ECE Department Voting Previous Committee Chair

ECE Department Curriculum Committee

II. Service Activities: Professional Service External to UTSA

1. **ESF Use case Sub-working Group on Network Slicing**, 2022
2. Member of the **National Spectrum Consortium (NSC)**, 2020-2022
3. **Assistant Associate Dean Fellow**: Participated in college wide academic initiatives, strategic planning, budget issues and/or broader challenges with respect to pedagogy and scholarly activities, Fellows will participate in a range of learning opportunities that are designed to realize college and institutional goals
 - (a) Chaired the Quantum Cluster Hire Search for nationally recognized quantum research faculty

- (b) Participated in the national search, led by the Provost, for the UTSA Vice President for Research, Economic Development and Knowledge Enterprise
 - (c) Member of the Inclusive Excellence Advisory Board
 - (d) Spearheading the National Spectrum Consortium Request for Proposal (RFP) for to bring a 5G network to Joint Base San Antonio
4. **JBSA Electro-Magnetic Defense Initiative (JBSA-EMDI), 5G Steering Group Leader**, June 1, 2019 - Present
 5. **IEEE Communication and Signal Processing Chapter of San Antonio:** (Currently Chair) Chair 2008-2011, 2018-present
 6. **2015 IEEE Smart Grid Communications:** Organizing Committee, EDAS Chair
 7. **Globecom 2014 Chair for High-Level Technical Program** Committee: Students Travel Grants Chair
 8. **Associate Editor and Editorial Board of IEEE System Journal**, 2011-2012
 9. **Associate Editor of Computers & Electrical Engineering**, Elsevier, 2008-2011;
 10. **Founder and Chair, the San Antonio IEEE Communications and Signal Processing Chapter**, 2008-2011, Vice-Chair 2011-Present, Treasurer, 2016-Present
 11. IEEE Conference Organizer and Leader of the 3GPP-LTE IEEE Wireless and Radio Workshop on 3GPP Long Term Evolution, San Diego, California, 2009
 12. Other Scholarly Activities
 - (a) Reviewed Papers for the Following Journals
 - i. IEEE Communication Magazine
 - ii. IEEE System Journal
 - iii. Elsevier Computers and Electrical Engineering
 - iv. IEEE Communication Letters
 - v. IEEE Transactions on Wireless Communications
 - vi. IEEE Wireless Communications and Mobile Computing
 - vii. International Journal on Communications Systems
 - (b) Served as Grant Review Panelist to the National Science Foundation
 - i. National Science Foundation Panel Session NeTS Wireless, 2018
 - ii. National Science Foundation Panel Session Graduate Research Fellowship Program (GRFP), 2013, 2014, 2017
 - iii. National Science Foundation Panel Session distributed proposal review: Sensors and Sensing Systems (SSS), 2014
 - iv. National Science Foundation Panel Session Partnerships for International Research and Education (PIRE), 2009

Media Activity:

1. **Appeared on Texas Public Radio** (Host: David Martin Davies) to discuss the **Challenges and Opportunities of 5G Integration** in San Antonio, December

19", 2019

2. **930AM The Answer:** Guest Appearance on the San Antonio Movers and Shakers Show, October 23", 2019

I3. Other Service Activities: External to UTSA

1. **Co-founder and Board of Directors for a Non-Profit Educational Organization for Educating K-12 Children in Haiti** (2010-present). board of Directors of HHIKids.org, a 401(c)3 non-profit 2010-Presentation, <http://hhikids.org>. The Helping Hands International (HHIKids.org) is a nonprofit organization that provides education, food, clothing, medical care, and orphanage child care for the children in selected countries around the world. Worked with team of community partners to create first school is located in Port-au-Prince Haiti. We have chosen to answer a calling in becoming caring hands on earth. The Helping Hands is a USA based. My role is organization leader, advisory, technical guidance, and fund-raising.
2. **Marital Status:** Married, Father of 3 daughters, age 9, 17, and 19