

Aatmesh Shrivastava

Curriculum Vitæ (January 29, 2024)

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Northeastern University, Boston
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APPOINTMENTS

- Associate Professor** 2023-
Northeastern University, Boston
- Director- Energy Efficient Circuits and Systems Group
 - Faculty Fellow – 2023
 - DARPA Young Faculty Award (YFA)– 2023
- Assistant Professor** 2016-2023
Northeastern University, Boston
- Director- Energy Efficient Circuits and Systems Group
 - NSF CAREER Award – 2022
- Sr. Design Director** 2014-2016
Everactive, Charlottesville
- Research: Self-powered Wake-up Radio
- Sr. Design Engineer** 2009-2010
Texas Instruments, Bangalore
- Research on high frequency interconnects, Oscillators
- Design Engineer** 2006-2009
Texas Instruments, Bangalore
- Research on high frequency interconnects, Oscillators

EDUCATION

- Ph.D. in Electrical Engineering** 2010-2014
The University of Virginia, Charlottesville
- “Mixed Signal Platform Circuits for Ultra Low Power Systems”
Dissertation advisor: Prof. Benton H. Calhoun
- Louis T Rader Graduate Research Award
 - Charles L. Brown Graduate Student Fellowship for Excellence
 - Paul Voigt Teaching Fellowship

–Visiting Student, *Massachusetts Institute of Technology (MIT) 2012-2013*

B.E. Electronics and Communication Engineering

2002-2006

Birla Institute of Technology, MESRA, Ranchi

Academic/Research advisor: Prof. R. Sukesh Kumar

HIGHLIGHTS

Research Interests: Ultra-low Power Circuits and Systems, Precision Circuits, Hardware for Machine-learning, IoT, Interconnects, Hardware-Security, Agile Communication

Publications: 23 Journal articles, 2 book chapters, and 38 conference papers

Patents: 20 granted and 10 pending US patents

Research Support: Total research support of \$9,612,359 (personal share: \$4,574,121) from NSF, DARPA, industry sponsors, NIH, DMEA, and AFRL

NSF CAREER Award: “An Ultra-low Power Analog Computing Hardware Design Framework for Machine Learning Inference in Edge Biomedical Devices”

DARPA Young Faculty Award: “Nano-Watt Power Machine-Learning Hardware using Precision Analog Computing”

Mass Ventures Acorn Innovation Award: “Ultra-low Power Wake-up Radio”

Northeastern CRI SPARK Fund: “Ultra-low Power Wake-up with Analog Computing for Always-On Connectivity”

Ultra-low Power Circuit and System Design: Made several seminal contributions towards enabling ultra-low power IoT and biomedical devices with nano-watt level machine-learning, radio connectivity, and energy harvesting capability.

RESEARCH SUPPORT

@ *Northeastern University, ECE Dept.:* Received Grants. Total: \$9,612,359 Personal Share: \$4,574,121

21. NSF CHEST IUCRC- University of Cincinnati, “Chip Design and Fabrication for CHEST Projects”, \$83,659 (co-PI, 11/23 - 12/24). Share-\$41,830 PI-Yunsi Fei
20. Northeastern-WHOI Seed Grant, “Demonstration of an Ultra-Low-Power Acoustic Wake-up Receiver for Buoyless Fishing”, \$100,000 (PI, Co-PI: Jim Partan, Mark Baumgartner, 10/23 - 9/24). Share-\$75,000
19. Defense Microelectronics Activity , SBIR, Phase-I, “High-G Clock Source”, \$50,000 (Site-PI, subcontract, Co-PI: Srinivas Tadigadapa, 9/23 - 2/24). Share-\$25,000 Main-(esc-Aerospace)
18. National Science Foundation (NSF), “FuSe: Heterogeneous Integration in Power Electronics for High-Performance Computing (HIPE-HPC)”, \$2,000,000 (co-PI, 1/24 - 12/27). PIs: Nian Sun (NEU), Khurram Afridi (Cornell) co-PI: Grace Xing, Share-\$500,000
17. Defense Advanced Research Projects Agency (DARPA), “Nano-Watt Power Machine-Learning Hardware using Precision Analog Computing”, \$1,000,000 (PI, 7/23 - 7/26).Share-\$1,000,000, **DARPA Young Faculty Award (YFA)**

16. Woods Hole Oceanic Institute (WHOI), “Ultra-low Power Acoustic Wake-up Receiver”, \$15,000 (PI, 9/22 - 8/23). Share-\$15,000
15. National Science Foundation (NSF), “High Efficiency Distributed Beamforming RF Energy Transfer using a Closed-loop Energy Receiver”, \$400,000 (PI, 9/22 - 8/25). Share-\$400,000
14. Northeastern University Alpha Fund, “Think Analog- Prototyping Grant”, \$5,000 (PI, 1/22 - 12/22). Share-\$5,000
13. National Science Foundation (NSF), “RINGS: Internet of Things Resilience through Spectrum-Agile Circuits, Learning-Based Communications and Thermal Hardware Security”, \$999,996 (co-PI, 5/22-4/25, Share-\$249,999). PI-Marvin Onabajo, Co-PI Yunsi Fei, Francesco Restuccia
12. National Science Foundation (NSF), “CAREER: An Ultra-low Power Analog Computing Hardware Design Framework for Machine Learning Inference in Edge Biomedical Devices”, \$499,947 (PI, 04/22 - 03/27). Share-\$499,947, **NSF CAREER Award**.
11. Northeastern University Center for Research Innovation (CRI) Spark Fund, “Ultra-low Power Wake-up with Analog Computing for Always on Connectivity”, \$50,000 (PI, 1/22 - 12/22). Share-\$50,000, **CoE Asst. Professor Award**.
10. Air Force Research Laboratory (AFRL) , SBIR, Phase-I & II, “SFX203-CSO1-0579 - Ultra Low Power (ULP) Timing Circuit with AFWERX”, \$800,000 (Site-PI, subcontract, 2/21 - 12/22). Share-\$314,484 PI-Danny Stritz (esc-Aerospace)
9. National Science Foundation (NSF), “Energy and Activity Analysis based On-chip methods for Mitigating Denial-of-Sleep Attacks in Ultra-low Power IoT Devices”, \$356,506 (PI, 08/21 - 9/24). Share-\$356,506
8. MassVentures, Acorn Innovation Award, “Ultra Low Power Wake-up Radio”, \$15,000 (PI, 5/21 - 10/21). Share-\$15,000
7. NSF CHEST IUCRC- University of Cincinnati, “Analog Trojan Detection Circuits and Validation Methods”, \$75,000 (PI, 6/21 - 12/22). Share-\$52,500 Co-PI-Yunsi Fei
6. National Science Foundation (NSF), “SCH:INT: Self-powered Smart Ring for Always-On Health Interventions”, \$299,537 (Co-PI, 10/20 - 9/22). Share-\$99,845 PI-Holly Jimson, Khoury College, Co-PI-Hui Fang
5. NSF CHEST IUCRC- University of Cincinnati, “Current Sensing based On-chip Analog Trojan Detection Circuit Compatible with Chip Design and Validation Flow”, \$50,000 (PI, 6/20 - 5/21). Share-\$30,000 Co-PI-Yunsi Fei
4. Interdigital, “Radio Receiver Architecture and Building Blocks for Ultra-Low Power Communications”, \$470,000 (co-PI, 1/20 - 1/23). (Research Support-\$320,000) Share-\$170,000 PI-Matto Rinaldi, Co-PI-Cristian Casella
3. National Science Foundation (NSF), “CSR: Small: Ultra-low Power Analog Computing and Dry Skin-Electrode Contact Interface Design Techniques for Systems-on-a-Chip with EEG Sensing and Feature Extraction”, \$500,000 (PI, 9/18 - 8/23). Share-\$250,000 Co-PI-Marvin Onabajo

2. National Institutes of Health (NIH), “Novel Implantable Smart Magnetolectric NanoRFIDs for Large-Scale Neural Magnetic Recording and Modulation.”, \$1,792,714 (co-PI, 9/18 - 8/22). Share-\$404,370 PI-Nian Sun, Co-PIs-Marvin Onabajo, Sydney Cash (MGH)
1. Northeastern University, “A Temperature Sensor Network to Study Public Health and Community Resilience Impacts of HeatWaves at Micro-Spatial Levels in the Town of Brookline.”, \$50,000 (PI, 7/17 - 9/18). Share-\$20,000

@ *Northeastern University, ECE Dept.:* Equipment Donations, Total: \$23,300, Personal Share: \$23,300

- Tektronix Inc., “TSG4104A Analog RF SG with 4 GHz Frequency coverage”, \$12,000 (PI, 2020).
- Tektronix Inc., “2450 Interactive Digital Source Meter”, \$5,700 (PI, 2020).
- Keysight, “N7555A ECal Module DC to 26.5 GHz, 2-port”, \$5,600 (PI, 2020).

@ *Northeastern University, ECE Dept.:* Pending Proposals.

@ *Northeastern University STEM Center:* Voluntary participation in fund raising as Sr./Key person for diversity, equity, and inclusion (DEI) activities without financial credit split.

Funded Proposals: Total: \$404,391

- National Science Foundation (NSF), “REU-PATHWAYS: Pathways for Community College Students to Enrich their Education and Careers”, \$404,391 (Key Person, 4/22 - 3/25).

@ *Everactive Inc.(formerly PsiKick Inc.), Charlottesville (Small Business Research Funding):* Successful Proposals. Total: \$2.76M

- MIT-Lincoln Laboratories, “Self Powered Miniature Wireless Sensing Platform.”, \$1,790,438 (Co-PI, 1/14 – 7/16).
Share : Individual share for PI and 4 other co-PI was not further sub-divided.
- Defense Health Program (DHP)–SBIR, “eBionicskins: An Assistive Technology Sensor Platform”, \$972,126 (Co-PI, 7/15-6/17).
Share : Individual share for PI and 2 other co-PI was not further sub-divided.

JOURNAL ARTICLES [Google Scholar Statistics]

* Denotes a student whose research is/was guided by me as degree advisor

Denotes a student whose research and degree is/was guided by me as degree co-advisor

Under Review:

27. *A. Mittal, M. Zhang, T. Gourousis, S. S. Kumar, Z. Zhang, Y. Fei, M. Onabajo, F. Restuccia, and A. Shrivastava, “Sub-6 GHz Energy Detection-based Fast On-Chip Analog Spectrum Sensing with Learning-driven Signal Classification”, *IEEE Internet of Things Journal (IEEE-IoT)* , (Under Review).

26. *A. Mittal, *Z. Xu, *K. Du, S. S. Kumar, and A. Shrivastava, “An Ultra-Low Power Closed-Loop Distributed Beamforming Technique for High Efficiency Wireless Power Transfer”, *IEEE Internet of Things Journal (IEEE-IoT)* , (Major Revision).
25. *N. Mirchandani, M. Sabagh, Y. Fei, and A. Shrivastava, “A High Efficiency Power Obfuscation Switched-Capacitor DC-DC Converter Architecture”, *IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems (IEEE-TCAD)* , (Major Revision).
24. S. Abdelfattah, *N. Mirchandani, A. Shrivastava and M. Onabajo, “Chopper Instrumentation Amplifier Design with Fully Symmetric Loops for Input Impedance Boosting”, *IEEE Transactions on Circuits and Systems-I (TCAS-I)* , (Under Review).

Published/Accepted for Publication:

23. *N. Mirchandani, and A. Shrivastava, “A 254 nW 20 kHz On-chip RC Oscillator with 21ppm/°C Minimum Temperature Stability and 10ppm Long Term Stability”, *IEEE Transactions on Circuits and Systems-I (TCAS-I)* , (Accepted for Publication).
22. D. Das, *Z Xu, M. Nasrollahpour, I. Martos-Repath, M. Zaeimbashi, A. Khalifa, *A Mittal, S. S. Cash, N. X. Sun, A. Shrivastava, and Marvin Onabajo, “Analysis and Demonstration of Simultaneous Wireless Sensing and Energy Harvesting with Hybrid Magnetolectric Antennas”, *IEEE Open Journal of Circuits and Systems (OJCAS)* **Vol. 4**, pgs: 139-155 (2023).
21. G. Michetti, L. Colombo, G. Giribaldi, *A. Mittal, H. Elkotby, R. Pragda, A. Shrivastava, and M. Rinaldi, “Low Impedance Antenna Design and Measurement for RF Wake-Up Radio Receivers”, *IEEE Internet of things Journal* , (Early Access).
20. *Z. Xu, A. Khalifa *A. Mittal, M. Nasrollahpourmotlaghzanjani, D. Das, M. Onabajo, N. X. Sun, S. S. Cash and A. Shrivastava, “A 30% Efficient High Output Voltage Fully Integrated Self-Biased Gate RF Rectifier Topology for Neural Implants”, *IEEE Journal of Solid State Circuits (JSSC)* **Vol: 57 Issue:11**, pgs: 3324–3335 (Nov. 2022).
19. *A. Mittal, *N. Mirchandani, G. Michetti, L. Colombo, T. Haque, M. Rinaldi and A. Shrivastava, “A ± 0.5 dB, 6nW RSSI Circuit with RF Power-to-Digital Conversion Technique for Ultra-low Power IoT Radio Applications”, *IEEE Transactions on Circuits and Systems-I (TCAS-I)* **Vol: 69: Issue:9**, pgs: 3526–3539 (Sept. 2022).
18. *N. Mirchandani, *Y. Zhang, S. Abdelfattah, M. Onabajo, and A. Shrivastava, “An Analog Computing Design Approach with Modeling and Simulation of Circuit-Level Nonidealities for EEG Feature Extraction”, *IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems (IEEE-TCAD)* **Vol: 42 Issue:1**, pgs: 229–242 (Jan. 2023).
17. *Z. Xu, A. Khalifa, *A. Mittal, M Nasrollahpourmotlaghzanjani, N. X. Sun, R. Etienne-Cummings, S. S. Cash, and A. Shrivastava, “Design Analysis and Methodology of RF Energy Harvesting Rectifier Circuit for Ultra-low Power Applications”, *IEEE Open Journal of Circuits and Systems (OJCAS)* **Vol: 3**, pgs: 82–96 (2022).
16. *Y. Zhang, *N. Mirchandani, S. Abdelfattah, M. Onabajo, and A. Shrivastava, “An Ultra-low Power RSSI Amplifier Circuit for Analog Computing EEG Feature Extraction”, *IEEE Transactions on Circuits and Systems-II (TCAS-II)* **Vol: 69 Issue:2**, pgs: 329–333 (Jan, 2022).

15. *A. Mittal and A. Shrivastava, “Self Powered and Self Sustained Energy Systems: Energy Autonomy in the Internet-of-Things Systems”, *Paritantra : A Journal of Systems Science and Engineering* , (Dec-2021). *Invited*
14. M. Zaeimbashi, M. Nasrollahpour, A. Khalifa, A. Romano, X. Liang, H. Chen, N. Sun, A. Matyushov, H. Lin, C. Dong, *Z. Xu, *A. Mittal, I. Martos-Repath, G. Jha, *N. Mirchandani, D. Das, M. Onabajo, A. Shrivastava, S. Cash, and N. X. Sun, “Ultra-compact dual-band smart NEMS magnetoelectric antennas for simultaneous wireless energy harvesting and magnetic field sensing”, *Nature Communications* **Vol: 12 Issue:5**, pgs: 31–41 (May-2021).
13. *T. Yang, *A. Mittal, Y. Fei, and A. Shrivastava, “Large Delay Analog Trojans: A Silent Fabrication-Time Attack Exploiting Analog Modalities”, *IEEE Transactions on Very Large Scale Integration Systems (TVLSI)* **Vol: 29 Issue:1**, pgs: 124–135 (Jan-2021).
12. D. Das, M. Nasrollahpour, *Z. Xu, M. Zaeimbashi, I. Martos-Repath, *A. Mittal, A. Khalifa A. Shrivastava, N. X. Sun, and M. Onabajo , “A Prototyping Platform for Magnetoelectric Antennas: Sensing, Energy Harvesting ”, *MDPI-Electronics* **9**, 1–11 (Dec-2020).
11. D. T. O’Brien, B. Gridley, A. Trlica, J. Wang, and A. Shrivastava, “Urban heat islets: Street segments with higher land surface temperatures experience a greater increase in medical emergencies during heat advisories”, *American Journal on Public Health* **Vol: 110**, pgs: 994–1001 (June-2020).
10. M. Zaeimbashi, H. Lin, C. Dong, X. Liang, M. Nasrollahpour, N. Sun, A. Matyushov, Y. He, X. Wang, C. Tu, Y. Wei, Y. Zhang, S. Cash, M. Monabjo, A. Shrivastava, and N. X. Sun, “NanoNeuroRFID: A Wireless Implantable Device Based on Magnetoelectric Antennas”, *IEEE Journal of Electromagnetics, RF and Microwaves in Medicine and Biology* **Vol: 3 Issue:3**, pgs: 206–215 (Sept-2019).
9. *N. Shafiee, *S. Tewari, B. H. Calhoun and A. Shrivastava, “Infrastructure Circuits for Lifetime Improvement of Ultra-Low Power IoT Devices”, *IEEE Transactions on Circuits and Systems-I (TCAS-I)*. **Vol: 64 Issue:9**, pgs: 2598–2610 (Sept-2017).
8. D. Akella Kamakshi, A. Shrivastava, and B. H. Calhoun, “A 0.2 V, 23 nW CMOS Temperature Sensor for Ultra-Low-Power IoT Applications”, *Journal of Low Power Electronics and Applications, (JLPEA)*. **Vol: 6 Issue:2**, pgs: 1–16 (June-2016).
7. D. Akella Kamakshi, A. Shrivastava, C. Duan and B. H. Calhoun, “A 36 nW 7 ppm/°C on-Chip Clock Source Platform for Near-Human-Body Temperature Applications”, *Journal of Low Power Electronics and Applications, (JLPEA)*. **Vol: 6 Issue:2**, pgs: 1–20 (May-2016).
6. A. Shrivastava, D. Akella Kamakshi, and B. H. Calhoun, “A 1.5nW, 32.768kHz XTAL Oscillator Operational from 0.3V Supply”, *IEEE Journal of Solid-State Circuits, (JSSC)*. **Vol: 51 Issue:3**, pgs: 686–696 (Mar-2016).
5. Y. Huang, A. Shrivastava, and B. H. Calhoun, “A Design and Theoretical Analysis of a 145mV to 1.2V Single-Ended Level Converter Circuit for Ultra-Low Power Low Voltage ICs”, *Journal of Low Power Electronics and Applications, (JLPEA)*. **Vol: 6 Issue:3**, pgs: 1–14 (June-2016).
4. A. Shrivastava, N. E. Roberts, O. U. Khan, D. D. Wentzloff, and B. H. Calhoun, “A 10mV-Input Boost Converter with Inductor Peak Current Control and Zero Detection for Thermoelectric and Solar Energy Harvesting with 220mV Cold-Start and -14.5dBm, 915MHz RF Kick-Start”, *IEEE Journal of Solid-State Circuits, (JSSC)*. **Vol: 50 Issue:8**, pgs: 1820–1832 (Aug-2015).

3. A. Roy, A. Klinefelter, F. B. Yahya, X. Chen, P. Gonzalez, D. Akella, J. Boley, K. Craig, M. Faisal, S. Oh, N. E. Roberts, Y. Shakhshsheer, A. Shrivastava, D. Vasudevan, D. D. Wentzloff, and B. H. Calhoun, “A $6.45\mu\text{W}$ Self-Powered SoC with Integrated Energy-Harvesting Power Management and ULP Asymmetric Radios for Portable Biomedical Systems”, *IEEE Transactions on Biomedical Circuits and Systems (TBioCAS)*. **Vol: 9 Issue:9**, pgs: 862–874 (Dec-2015).[IF 4.3]
2. A. Shrivastava, and B. Calhoun, “A DC-DC Converter Efficiency Model for System Level Analysis in Ultra Low Power Applications”, *Journal of Low Power Electronics and Applications, (JLPEA)*. **Vol: 3 Issue:3**, pgs: 1–18 (June-2013).
1. Y. Zhang, F. Zhang, Y. Shakhshsheer, J. D. Silver, A. Klinefelter, M. Nagaraju, J. Boley, J. Pandey, A. Shrivastava, E. J Carlson, A. Wood, B. H Calhoun, and B. P Otis, “A Batteryless $19\mu\text{W}$ MICS/ISM-Band Energy Harvesting Body Sensor Node SoC for ExG Applications”, *IEEE Journal of Solid-State Circuits, (JSSC)*. **Vol: 48 Issue:1**, pgs: 1820–1832 (Jan-2013).

BOOK CHAPTER

2. A. Verma, D.K. Chaturvedi, B.K. Panigrahi and A. Shrivastava, “Epilepsy Detection System using CWT and Deep-CNN”, in *Artificial Intelligence in Biomedical and Modern Healthcare Informatics* (Elsevier, 2023).
1. *S. Tewari, and A. Shrivastava, “Ultra-low Power Charge-Pump-Based Bandgap References”, in *Hybrid ADCs, Smart Sensors for the IoT, and Sub-1V and Advanced Node Analog Circuit Design* (Springer, 2018).

CONFERENCE PUBLICATION [Google Scholar Statistics]

* Denotes a student whose research is/was guided by me as degree advisor

Denotes a student whose research and degree is/was guided by me as degree co-advisor

Published/Accepted for Publication:

38. *A. Mittal, *Z. Xu and A. Shrivastava, “Energy Efficient, Secure and Spectrum Aware Ultra-Low Power Internet-of-Things System Infrastructure for Precision Agriculture”, *2023 IEEE Conference on AgriFood Electronics (CAFE)* , (Sept-2023, Torino, Italy).
37. *M. Abedi and A. Shrivastava, “A New Power efficient, wide-range PWM-based MPPT circuit for Ultra-low Power Energy Harvesters”, *2023 IEEE Midwest Symposium on Circuits and Systems (MWSCAS)* , (Aug-2023, Pheonix, Arizona).
36. T. Gourousis, Z. Zhang, M. Yan, M. Zhang, *A. Mittal A. Shrivastava, F. Restuccia, Y. Fei, and M. Onabajo, “Identification of Stealthy Hardware Trojans through On-Chip Temperature Sensing and an Autoencoder-Based Machine Learning Algorithm”, *2023 IEEE Midwest Symposium on Circuits and Systems (MWSCAS)* , (Aug-2023, Pheonix, Arizona).
35. L. Colombo, G. Michetti, G. Giribaldi, N. Casilli, *A. Mittal, G. Zhang, P. Carbol, A. Shrivastava, C. Cassella, and M. Rinaldi, “A MEMS-boosted Over-the-Air RF Energy Harvester for IoT Receivers”, *2023 IEEE International Frequency Control Symposium (IFCS)* , (May-2023, Toyama, Japan).

34. *M. Abedi and A. Shrivastava, “An Ultra-Low Power Automated Maximum Power Point Tracking Circuit with 99.9% Tracking Efficiency”, *2023 IEEE International Symposium on Circuits and Systems (ISCAS)* , (May-2023, Monterey, CA).
33. *A. Mittal and A. Shrivastava, “Detecting Continuous Jamming Attack using Ultra-low Power RSSI Circuit”, *2022 IEEE International Symposium on Hardware Oriented Security and Trust (HOST)* , (June-2022, Washington DC).
32. *M. Abedi T. Yang, Y. Fei, and A. Shrivastava, “High-Precision Nano-Amp Current Sensor and Obfuscation Based Analog Trojan Detection Circuit”, *2022 IEEE International Symposium on Circuits and Systems (ISCAS)* , (May-2022, Austin, Texas).
31. G. Michetti, G. Giribaldi, M. Pirro, *A. Mittal, T. Haque, P. Cabrol, R. Pragada, H. Elkotby, L. Colombo, A. Shrivastava, and M. Rinaldi, “Hybridly Integrated MEMS-IC RF Front-End for IoT with Embedded Filtering and Passive Voltage Amplification”, *2021 IEEE Sensors Conference* , (Nov-2021, Virtual).
30. L. Colombo, G. Michetti, M. Pirro, G. Giribaldi, P. Simeoni, *A. Mittal, R. Pragada, H. Elkotby, A. Shrivastava, and M. Rinaldi, “Filtering Performance of Microacoustic-based Matching Networks for Wake-Up Applications”, *2021 IEEE MTT-S International Microwave Filter Workshop (IMFW)* , (August-2021, Virtual, East Lansing, MI).
29. D. Das, *Z. Xu, M. Nasrollahpour, I. Martos-Repath, M. Zaeimbashi, A. Khalifa, *A. Mittal, S. Cash, N. X. Su, A. Shrivastava, and M. Onabajo, “Simulation and Experimental Evaluation of Energy Harvesting Circuits with Magnetoelectric Antennas”, *2021 IEEE Midwest Symposium on Circuits and Systems (MWSCAS)* , (August-2021, Virtual, East Lansing, MI).
28. *N. Mirchandani, M. Sabbagh, Y. Fei and A. Shrivastava, “A High Efficiency Power Obfuscation Switched Capacitor DC-DC Converter Architecture”, *2021 Design Automation Conference (DAC), WIP-Poster* , (Dec-2021, San Francisco, CA).
27. *A. Mittal and A. Shrivastava, “Self Powered and Self Sustained Energy Systems: Energy Autonomy in the Internet-of-Things Systems”, *2021 National Systems Conference*, , (May-2021, Dayalbagh, Agra, India (Virtual)). Best Paper Award
26. *T. Yang, *A. Mittal, Y. Fei and A. Shrivastava, “Large Delay Analog Trojans: A Silent Fabrication-Time Attack Exploiting Analog Modalities”, *New England Security Day, poster*, (April-2021, (Virtual)).
25. *A. Baig, *A. Barbeillini, *Y. Zhang, *N. Mirchandani and A. Shrivastava, “Seizure Detection in Epilepsy Patients Using Machine Learning Algorithms”, *2020 IEEE MIT Undergraduate Research Technology Conference* , (Oct-2020, Cambridge, MA).
24. *A. Sinha, and A. Shrivastava, “Exploring Post Quantum Analog Encryption”, *2020 IEEE MIT Undergraduate Research Technology Conference* , (Oct-2020, Cambridge, MA).
23. *Y. Zhang, *N. Mirchandani, M. Onabajo, and A. Shrivastava, “RSSI Amplifier Design for a Feature Extraction Technique to Detect Seizures with Analog Computing”, *2020 IEEE International Symposium on Circuits and Systems (ISCAS)* , (Oct-2020, Seville, Spain).
22. *Z. Xu, *N. Mirchandani, M. A. A. Ibrahim, M. Onabajo, and A. Shrivastava, “A High Efficiency DC-DC Converter Architecture with Adjustable Switching Frequency to Suppress

- Noise Injection in RF Receiver Front-Ends”, *2020 IEEE International Symposium on Circuits and Systems (ISCAS)* , (Oct-2020, Seville, Spain).
21. *N. Mirchandani, *N. Shafiee, Y. Fei, and A. Shrivastava, “An Ultra-low Power and Lower Area Current-Mode based Physically Unclonable Function with less than 100nW Power Consumption and a Native Instability of 0.6875% for IoT Applications”, *2020 IEEE Midwest Symposium on Circuits and Systems (MWSCAS)* , (August-2020, Springfield, MA).
 20. I. Martos-Repath, *A. Mittal, M. Zaeimbashi, D. Das, N. X. Sun, A. Shrivastava, and M. Onabajo , “Modeling of Magnetolectric Antennas for Circuit Simulations in Magnetic Sensing Applications”, *2020 IEEE Midwest Symposium on Circuits and Systems (MWSCAS)* , (August-2020, Springfield, MA).
 19. S. Abdelfattah, A. Shrivastava, and M. Onabajo, “A Chopper Instrumentation Amplifier with Fully Symmetric Negative Capacitance Generation Feedback Loop and Online Digital Calibration for Input Impedance Boosting”, *2019 IEEE Mid-West Symposium on Circuits and Systems (MWSCAS)* , (August-2019, Dallas, Tx).
 18. *N. Mirchandani and A. Shrivastava, “CMOS based Ultra-low Power High-Precision Analog Vector Matrix Multiplication Circuit with 0.1% Error for Vision Application”, *2019 IEEE Mid-West Symposium on Circuits and Systems (MWSCAS)* , (August-2019, Dallas, Tx).
 17. *N. Mirchandani and A. Shrivastava, “High Stability Gain Structure and Filter Realization with less than 50 ppm/°C Temperature Variation with Ultra-low Power Consumption using Switched-capacitor and Sub-threshold Biasing”, *2018 IEEE International Symposium on Circuits and Systems (ISCAS)* , (May-2018, Florence, Italy).
 16. M. A. A. Ibrahim, *N. Mirchandani, N. Shafiee, M. Onabajo and A. Shrivastava, “Study of Performance Impact from Powering RF Receiver Front-End Circuits with a DC-DC Converter”, *2018 IEEE International Symposium on Circuits and Systems (ISCAS)* , (May-2018, Florence, Italy).
 15. N. E. Roberts, K. Craig, A. Shrivastava, S. Wooters, Y. Shaksheer , D. Wentzloff, and B. H. Calhoun, “A 236nW -56.5dBm Sensitivity Bluetooth Low-Energy Wakeup Receiver with Energy Harvesting in 65nm CMOS”, *2016 IEEE International Solid-State Circuits Conference (ISSCC)* , (Feb-2016, San Fransisco, CA).
 14. Y. Huang, A. Shrivastava, and B. H. Calhoun, “A 145mV to 1.2V Single Ended Level Converter Circuit for Ultra-Low Power Low Voltage ICs”, *2015 SOI-3D-Subthreshold Microelectronics Technology Unified Conference (S3S)* , (Sept-2015, Monterey, CA).
 13. D. Akella, A. Shrivastava, and B. H. Calhoun, “A 23 nW, All-CMOS Ultra-Low Power Temperature Sensor Operational from 0.2 V”, *2015 SOI-3D-Subthreshold Microelectronics Technology Unified Conference (S3S)* , (Sept-2015, Monterey, CA).
 12. Y. Shaksheer, A. Shrivastava, N. Roberts, K. Craig, S. Wooters, D. D. Wentzloff, and B. H. Calhoun, “Ultra Low Power Circuits and Systems for Self-Powered Wireless Sensors”, *2015 Government Microcircuits Applications and Critical Technology Conference (GOMACTech)* , (Mar-2015, St. Louis, MO).
 11. A. Shrivastava, K. Craig, N. E. Roberts, D. Wentzloff, and B. H. Calhoun, “A 32nW Bandgap Reference Voltage Operational from 0.5V Supply for Ultra-low Power Systems”, *2015 IEEE International Solid-State Circuits Conference (ISSCC)* , (Feb-2015, San Fransisco, CA).

10. A. Klinefelter, N. E. Roberts, Y. Shakhsher, P. Gonzalez, A. Shrivastava, A. Roy, K. Craig, M. Faisal, J. Boley, S. Oh, Y. Zhang, D. Akella, D. Wentzloff, B.H. Calhoun, “A 6.45 μ W Self-Powered IoT SoC with Integrated Energy-Harvesting Power Management and ULP Asymmetric Radios”, *2015 IEEE International Solid-State Circuits Conference (ISSCC)* , (Feb-2015, San Fransisco, CA).
9. A. Shrivastava, D. Wentzloff, and B. H. Calhoun, “A 10mV-Input Boost Converter with Inductor Peak Current Control and Zero Detection for Thermoelectric Energy Harvesting”, *2014 IEEE Custom Integrated Circuits Conference (CICC)* , (Sept-2014, San Jose, CA).
8. A. Shrivastava, Y. K. Ramadass, S. Khanna, S. Bartling, and B. H. Calhoun, “A 1.2 μ W SIMO Energy Harvesting and Power Management Unit with Constant Peak Inductor Current Control Achieving 84-92% Efficiency Across Wide Input and Output Voltages”, *2014 IEEE Symposium on VLSI Circuits (VLSI symp.)* , (June-2014, Honolulu, HI).
7. A. Shrivastava, J. Pandey, B. Otis, and B. H. Calhoun, “A 50nW, 100kbps Clock/Data Recovery Circuit in an FSK RF Receiver on a Body Sensor Node”, *2013 IEEE International Conference on VLSI Design Conference 2013* , (Jan-2013, Pune, India).
6. A. Shrivastava, Y. K. Ramadass, S. Bartling, and B. H. Calhoun, “Single Inductor Energy Harvesting and Power Management Circuit for Body Sensor Nodes”, *2013 IEEE International Solid-State Circuits Conference Student Research Preview (ISSCC-SRP)* , (Feb-2013, San Fransisco, CA).
5. A. Shrivastava, and B. H. Calhoun, “A 150nW, 5ppm/ $^{\circ}$ C, 100kHz On-Chip Clock Source for Ultra Low Power SoCs”, *2012 IEEE Custom Integrated Circuits Conference (CICC)* , (Sept-2012, San Jose, CA).
4. A. Shrivastava, and B. H. Calhoun, “A Charge Pump Based Receiver Circuit for a Voltage Scaled Interconnect”, *2012 IEEE International Symposium on Low Power Electronics Design (ISLPED)* , (July-2012, Los Angles, CA).
3. A. Shrivastava, and B. H. Calhoun, “Modeling DC-DC Converter Efficiency and Power Management in Ultra Low Power Systems”, *2012 IEEE Sub-threshold Conference (Sub-Vt)* , (Sept-2012, Waltham, MA).
2. F. Zhang, Y. Zhang, J. Silver, Y. Shakhsher, M. Nagaraju, A. Klinefelter, J. Pandey, J. Boley, E. Carlson, A. Shrivastava, B. Otis, B. H. Calhoun, “A Batteryless 19 μ W MICS/ISM-Band Energy Harvesting Body Area Sensor Node SoC”, *2012 IEEE International Solid-State Circuits Conference (ISSCC)* , (Feb-2012, San Fransisco, CA).
1. K. Rajagopal, A. Shrivastava, V. Menezes, “An enhanced topology for reliability of a High Performance 3.3V IO in a single well CMOS 1.8v-oxide Low voltage Process”, *2009 IEEE International Symposium on Quality Electronics Design (ISQED)* , (Mar-2009, San Jose, CA).

GRANTED US PATENTS

20. A. Shrivastava, “Self-Powered Analog Computing Architecture with Energy Monitoring to Enable Machine-Learning Vision at the Edge”, **US-11,599,782** (*Granted on March 7, 2023*).

19. A. Shrivastava, “High stability gain structure and filter realization with less than 50 ppm/°C temperature variation with ultra-low power consumption using switched-capacitor AND sub-threshold biasing”, **US-11,239,806** (*Granted on Feb 1, 2022*).
18. B. H. Calhoun and A. Shrivastava, “Methods and apparatus for a single inductor multiple output (SIMO) DC-DC converter circuit”, **US-10,170,990** (*Granted on January 1, 2019*).
17. B. H. Calhoun and A. Shrivastava, “Low power clock source”, **US-9,998,124** (*Granted on June 12, 2018*).
16. B. H. Calhoun and A. Shrivastava, “Low voltage crystal oscillator (XTAL) driver with feedback controlled duty cycling for ultra low power”, **US- 9,979,348** (*Granted on May 22, 2018*).
15. B. H. Calhoun and A. Shrivastava, “Low input voltage boost converter with peak inductor current control and offset compensated zero detection”, **US- 9,973,086** (*Granted on May 15, 2018*).
14. B. H. Calhoun and A. Shrivastava, “Low voltage crystal oscillator (XTAL) driver with feedback controlled duty cycling for ultra low power”, **US- 9,941,838**. (*Granted on April 10, 2018*).
13. A. Shrivastava, “Methods and apparatus for low input voltage bandgap reference architecture and circuits”, **US- 9,857,813**. (*Granted on January 2, 2018*).
12. B. H. Calhoun and A. Shrivastava, “Low input voltage boost converter with peak inductor current control and offset compensated zero detection”, **US- 9,812,965** (*Granted on November 7, 2017*).
11. A. Shrivastava, Y. K. Ramadass, S. Bartling “Single inductor multiple output discontinuous mode DC-DC converter and process”, **US- 9,746,868**. (*Granted on August 29, 2017*).
10. B. H. Calhoun and A. Shrivastava, “Methods and apparatus for a single inductor multiple output (SIMO) DC-DC converter circuit”, **US- 9,698,685** (*Granted on July 4, 2017*).
9. B. H. Calhoun and A. Shrivastava, “Low power clock source”, **US-9,590,638** (*Granted on March 7, 2017*).
8. B. H. Calhoun and A. Shrivastava, “Low input voltage boost converter with peak inductor current control and offset compensated zero detection”, **US- 9,490,698** (*Granted on November 8, 2016*).
7. B. H. Calhoun and A. Shrivastava, “Low voltage crystal oscillator (XTAL) driver with feedback controlled duty cycling for ultra low power”, **US-9,350,294**. (*Granted on May 24, 2016*).
6. B. H. Calhoun and A. Shrivastava, “Low input voltage boost converter with peak inductor current control and offset compensated zero detection”, **US- 9,325,240** (*Granted on April 26, 2016*).
5. A. Shrivastava, “Methods and apparatus for low input voltage bandgap reference architecture and circuits”, **US- 9,158,320**. (*Granted on October 13, 2015*).
4. A. Shrivastava, Y. K. Ramadass “Apparatus and method for controlling inductor current in a switch mode power supply”, **US- 9,164,528** (*Granted on October 20, 2015*).
3. A. Shrivastava, and R. Yadav “Pulse generation circuits in integrated circuits”, **US- 8,797,072**. (*Granted on August 5, 2015*).
2. A. Shrivastava, and R. Yadav “Power on reset generation circuits in integrated circuits”, **US- 8,680,901**. (*Granted on March 25, 2015*).
1. A. Shrivastava, R. Yadav, and P. K. Rana “Fast start-up crystal oscillator”, **US- 8,120,439**. (*Granted on Feb 21, 2012*).

PENDING US PATENTS

3. *N Mirchandani and A. Shrivastava, “Side-channel Power Obfuscation Techniques Using Charge-Equalizing”, **US-63/162,716** Filed April, 2021.
2. *A. Mittal and A. Shrivastava, “Ultra Low Power Wake up Radio Architecture”, **US-63/144,654** Filed Feb, 2021.
1. A. Shrivastava, “Methods for generating high stability gain structure and filters in integrated circuits”, **US-16/829802** Filed March, 2020.

INVITED TALKS AND WORKSHOP CONTRIBUTIONS

14. Analog Computing SoC and Connectivity Solutions, IEEE-CAS Bangalore, Virtual 03/22
13. Ultra-low Power Circuit Design Techniques for Low Power IoT and Biomedical Systems, Texas A&M University, Virtual 02/22
12. Ultra-low Power Circuit Design Techniques for Low Power IoT and Biomedical Systems, Dayalbagh Educational Institute, Agra, 01/22
11. Ultra-low Power Circuit Design Techniques for Low Power IoT and Biomedical Systems, University of Delaware, Virtual 12/21
10. Chip Design for Ultra-low Power Sensors , IIT-Delhi 2020, New-Delhi, India 11/20
9. Ultra-low Power SoC Design Strategies, Qualcomm, Boxborough,MA 2/19
8. Lifetime Improvement of Ultra-low Power IoT Devices, EtCMOS 2018, Whistler, Canada 5/18
7. State of the Art Energy Harvesting for IoT, ESWeek, 2017, Seoul, Korea 10/17
6. IoT Tech Talk Series, Google, Mountainview, CA 04/17
5. Seminar on Ultra-low Power Circuit, Columbia University, NY, 03/17
4. Design of Charge-pump based Bandgap Reference, AACD Workshop 2017, Eindhoven, Netherlands 3/17
3. The University of Virginia, Charlottesville, 3/14
2. Dayalbagh Educational Institute, Agra, India, 3/14
1. Power Management and Power Delivery for Energy Efficient Circuit and System Design, Maxim Integrated, Chlemsford, 3/13

HONORS AND AWARDS

- Northeastern College of Engineering Faculty Fellow, 2023
- DARPA YFA, 2023
- NSF CAREER, 2022
- MassVentures Acorn Innovation Award, 2021
- 2013 Charles L. Brown Graduate Fellowship for Excellence, Electrical Engineering, The University of Virginia.
- 2013 Louis T. Rader Graduate Research Award, Electrical Engineering, The University of Virginia.

- 2013 Paul Voigt Graduate Teaching Fellowship, School of Engineering and Applied Sciences, The University of Virginia.
- 2013 International Solid State Circuits Conference Student Research Preview, ISSCC-SRP, *Equivalent to Student Design Contest*

TEACHING

@ Northeastern University, ECE Dept.:

Course Development and Design of New Courses

EECE 7250- Power Management Integrated Circuits (PMIC)

I have developed a new 4-credit graduate level course “Power Management Integrated Circuits (PMIC)”, which was initially offered as a special topics course “EECE-7398”, but has since been adopted as a regular graduate course “EECE-7250”. The PMIC course is offered to senior graduate students every alternate Fall semesters. It is an advanced graduate level course that draws significantly from the recent advancements in circuit design for power management in integrated circuits. It covers theoretical analysis, practical design, and simulation of power management circuits such as voltage regulators, DC-DC converters, switched-capacitor regulators, reference voltage designs, and energy harvesting circuits. I have developed the course material by incorporating details of recent research publications on integrated power management solutions. A semester long project is also used in the course to engage students in practical as well as research oriented circuit designs. Two projects from this class have led to publications in the proceedings of the *IEEE International Symposium on Circuits and Systems (ISCAS)*. Skills developed through the offerings in PMIC is equally in demand in power electronics and semiconductor industry.

EECE 2150- Circuits and Signals: Biomedical Applications

EECE-2150 Circuits and Signals is a 5-credit undergraduate course that introduces students to circuit and system design. The course covers fundamentals of circuits such as Kirchhoff’s current and voltage laws (KCL/KVL), circuit theories, and basic filter design. The course is offered along with labs to train students on circuit design experiments. I offer EECE 2150 every spring semester. I have developed several new teachings materials for the course including new power point presentation of lectures, detailed lecture notes, class examples, and recorded lectures for students to review the course material. I have also worked with course teaching assistants (TAs) to develop balanced demonstration videos on the lab to help students avoid common mistakes. The skills developed in this course are often needed in system design companies and are helpful in securing co-op positions.

- Fall 2023: **EECE-7250 PMIC**
Teacher Rating and Course Evaluation (TRACE)
Instructor Effectiveness : 4.5 Learning: 4.6 Intellectual Challenge : 4.7
- Spring 2023: **EECE-2150 Circuits and Signals**
TRACE
Instructor Effectiveness : 4.1 Learning: 4.2 Intellectual Challenge : 4.6
- Spring 2022: **EECE-2150 Circuits and Signals**
TRACE
Instructor Effectiveness : 4.1 Learning: 4.5 Intellectual Challenge : 4.7

- Fall 2021: **EECE-7250 PMIC**
TRACE
Instructor Effectiveness : 4.1 Learning: 4.4 Intellectual Challenge : 4.9
- Spring 2021: **EECE-2150 Circuits and Signals**
TRACE
Instructor Effectiveness : 4.1 Learning: 4.1 Intellectual Challenge : 4.4
- Spring 2020: **EECE-2150 Circuits and Signals**
TRACE
Instructor Effectiveness : 3.6 Learning: 4.0 Intellectual Challenge : 4.2
- Fall 2019: **EECE-7250 PMIC**
Trace Evaluation
Instructor Effectiveness : 4.4 Learning: 4.3 Intellectual Challenge : 4.2
- Spring 2019: **EECE-2150 Circuits and Signals**
TRACE
Instructor Effectiveness : 4 Learning: 4.2 Intellectual Challenge : 4.3
- Spring 2018: **EECE-2150 Circuits and Signals**
TRACE
Instructor Effectiveness : 3 Learning: 4 Intellectual Challenge: 4.4
- Fall 2017: **EECE-7398 PMIC**
TRACE
Instructor Effectiveness : 4.9 Learning: 4.9 Intellectual Challenge : 4.8
- Summer 2017: **EECE-3140 Electronics-II**
TRACE
Instructor Effectiveness : 3.3 Learning: 4.1 Intellectual Challenge : 4.6
- Fall 2016: **EECE-7398 PMIC**
TRACE
Instructor Effectiveness : 4.3 Learning: 4.1 Intellectual Challenge : 4.4

@ The University of Virginia (UVA), ECE Dept.:

- Fall 2013: **ECE-4332/6332 VLSI Design**

STUDENT SUPERVISION

Current Graduate Students

- Yogesh Gudi, **Ph.D. 28** : Dissertation co-Advisor
- Utkarsh Kumar, **Ph.D. 28** : Dissertation Advisor
- Kiana Ghasemi, **Ph.D. 28** : Dissertation Advisor

- Sudhanshu Khanna, **Ph.D. 26** : Dissertation Advisor
- Kayland Harrison, **Ph.D. 26** : Dissertation Advisor
- Mostafa Abedi, **Ph.D. 25** : Dissertation Advisor
- Ankit Mittal, **Ph.D. 24** : Dissertation Advisor

Past Graduate Students

- Ziyue Xu, **Ph.D. Fall-2023** : Dissertation Advisor
Title: High Efficiency RF Energy Harvesting and Power Management Circuits Techniques for IoT Applications
- Nikita Mirchandani, **Ph.D. Summer-2022** : Dissertation Advisor
Title: Ultra-Low Power and Robust Analog Computing Circuits and System Design Framework for Machine Learning Applications
- Yuqing Zhang, **M.S. Spring-2022**: Thesis Advisor
Title: An Ultra-Low Power Analog computing Based RSSI Circuit for Seizure Detection
- Tiancheng Yan, **M.S. Spring-2022** : Thesis Advisor
Title: Large Delay Analog Trojans: Design and Detection
- Shikhar Tewari, **M.S. Fall-2018** : Thesis Advisor
Title: An Ultra Low Power Voltage Reference using Charge-pump and Switched Capacitor Network

Current and Past Undergraduate Students

Undergraduate Research Assistants: Claire Cregin (2023-), Ryan Dailor (2022-), Kaden Du (2022-), Tyler Mckenzie (2022), Dillon Jhonstone (2019-2021)

Undergraduate Program for Leaders In Future Transformation (UPLIFT) Scholars: Kayla Myklebust (2021), Abdullah Awois (2021), Mei Lin Mulvey (2020)

REU-POWER: Pathways Opening World Energy Resources: David Abrahamyan (2021), Saul Blain (2021), Juancy Reyes (2019)

REU-Pathways: Matthew Sharon (2022)

High School Summer Interns

Theodore Lourie (2022), Stefan Lachenmann (2022), Aribah Baig (2020), Alessandro Barbelini (2020), Rohan Abichandani (2019), Hannah Nguyen (2019), Anant Sinha (2018)

Thesis Committee Membership

Safaa Abdelfattah **Ph.D. Exp. 2023**, Keng Chen **Ph.D. 2022**, Neville Sun **Ph.D. 2021**, Mahmoud Ibrahim **Ph.D. 2021**, Mohsen Zaeimbashi **Ph.D. 2020**, Chao Luo **Ph.D. 2019**, Ufuk Muncuk **Ph.D. 2019**, Mengting Yan, **M.S. 2019**, Gaurav Jha **M.S. 2019**,

PROFESSIONAL ACTIVITIES

External Service

- Senior Editor: IEEE Journal on Emerging and Selected Topics in Circuits and Systems (JETCAS) (2024-2025)
- Secretary-Analog Signal Processing Technical Committee (ASPTC), IEEE-*CAS* (2023-2024)
- Associate Editor: IEEE Transactions on Circuits and Systems Part I: Regular Papers (TCAS-I) (2023-2024)
- Associate Editor: IEEE Open Journal on Circuits and Systems (OJCAS) (2021-)
- Associate Editor: Journal of Low-Power Electronics and Application (JLPEA) (2020-)
- Member-Analog Signal Processing Technical Committee (ASPTC), IEEE-*CAS* (2020-2023)
- Panelist: NSF (2-panels 2018, 2-panels 2019, 2-Panels 2021)
- Technical Program Committees:
 - Design Automation Conference (DAC) (PC Member, 2020-) (Session Chair, 2021)
 - International Conference on Computer Design (ICCD) (PC Member, 2019-2022)
 - International Symposium on Circuits and Systems (ISCAS) (PC Member, 2017-) (Session Chair, 2017-)
 - Midwest Symposium on Circuits and System (MWSCAS) (Organizing Committee Member-2017, 2023, 2026, Track-chair 2020-, PC Member 2017-)
 - International Symposium on Low Power Electronics Design (ISLPED) (Track Co-chair 2022, PC Member, 2017-)
 - International Conference on VLSI Design (VLSI-D) (PC Member, 2018-2021)
 - Great Lakes Symposium VLSI (GLS-VLSI) (PC Member, 2020) (Track Chair, 2022)
 - 6th International Conference on Wired/Wireless Internet Communications (WWIC)-2018 : Local arrangements Chair
- Guest Editor: Journal of Low-Power Electronics and Application (JLPEA) 2019.
- Editorial Review Board Member: IEEE Solid-State Circuits Letts (SSCL) (2017-)
- Reviewing and Refereeing
 - Book Reviewer: Springer
 - Journal Reviewer: JSSC,TCAS-I,TCAS-II, T-VLSI, ACCESS, JLPEA, TODAES, Electronics and several others.

Internal Service

- Senator, Northeastern Faculty Senate (2023-)
- Hiring Committees
 - Faculty Hiring Committee-2020
 - Faculty Hiring Committee-2018
 - Co-op faculty search committee-2017
- Department Publicity Committee 2021-
- Strategic Planning Committee-2020-2021
- Member: Undergraduate Studies Committee 2017-18

- Member: CoE Awards Committee 2019-
- Member: ECE Awards Committee 2019-
- Faculty Advisor: Hindu Vedic Vision Society 2019 -

Societies

- Sr. Member-IEEE
- Member-IEEE Solid State Circuits Society (SSCS)
- Member-IEEE Circuits and Systems Society (CAS)

MEDIA COVERAGE

- “Using Innovative Circuit Design to Extend the Battery Life of the IoT — with SPARK fund Awardee Dr. Aatmesh Shrivastava”, Northeastern University Center for Research Innovation (CRI)
- “Can a technology that’s been forgotten for a half-century improve medical care?,” Northeastern University College of Engineering
- “Joining an Adviser on Sabbatical,” School of Engineering and Applied Science, Unbound Magazine, Spring 2014.
- “U.Va. Spinoff PsiKick’s Batteryless Sensors Poised for Coming ‘Internet of Things’ UVA Today, April 16, 2014.
- IEEE Solid-State Circuits Magazine, Spring 2013, discussed Dr. Shrivastava’s presentation at ISSCC 2013 on his graduate work on a single-inductor highly efficient energy harvesting and power management circuit.
- Media and Entertainment Technologies (M and E Tech or Mandetech.com) (a digital publication), discussed Dr. Shrivastava by name and described his work on Bandgap reference.
- Semiconductor Manufacturing AND Design (SemiMD.com), a publication and portal covering semiconductor technologies, described Dr. Shrivastava’s presentation at ISSCC on Bandgap Reference.
- Electronic Engineering Times (EETimes.com), covering the global electronics community, described discussions about Dr. Shrivastava’s presentation at ISSCC concerning his integrated IoT chips that aim to run from harvested ambient energy in the article *18 Views of ISSCC*.
- Highbeambusiness (the business content provider from Cengage Learning, a leading producer of research solutions for the professional, library, and academic markets worldwide), in the article Bandgap Reference on the Agenda described Dr. Shrivastava’s bandgap reference invention as presented at ISSCC.
- University of Virginia Engineering Unbound Magazine, Oct. 2014, described Dr. Shrivastava’s circuit design research at MIT.