CURRICULUM VITAE

# Alexander J. Edwards

March 22, 2026

## CONTACT INFORMATION


Department of Electrical and Computer Engineering
The University of Maryland
College Park, MD, 20742

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## EDUCATION

- **Doctor of Philosophy**, Computer Engineering
  The University of Texas at Dallas, Richardson, TX — Sep. 2024

  *Research Advisor:* Dr. Joseph S. Friedman

  *Dissertation:* Stochasticity and Spintronics for Bio-inspired Computing and Hardware Security

  *Research Summary:* Moore's law scaling is rapidly slowing, galvanizing the search for alternative architectures or technologies to complement the weaker aspects of CMOS. My research focuses on identifying these emergent weaknesses in conventional CMOS and corresponding out-of-the-box solutions to share the computational burden. While it is unlikely that CMOS will ever be completely replaced due to its maturity and ubiquity, in applications where general-purpose computing is unsuitable – whether due to resource constraints or high throughput requirements – unconventional advances like those I have explored in my research will be necessary.

- **Master of Science**, Electrical Engineering, Computing Systems
  The University of Texas at Dallas, Richardson, TX — May 2024

- **Bachelor of Science**, Computer Engineering
  Oklahoma Christian University, Edmond, OK — Apr. 2019

# RESEARCH EXPERIENCE

*Postdoctoral Associate* - University of Maryland and Laboratory for Physical Sciences, College Park, MD — Nov. 2024 - Present

*Graduate Research Assistant* - University of Texas at Dallas Richardson, TX — Aug. 2019 - Sep. 2024

# PUBLICATIONS

## ***Journal Publications***

1. Michael P. Frank, **A. J. Edwards**, Industry perspective: Limits of energy efficiency for conventional CMOS and the need for adiabatic reversible computing, *APL Electronic Devices* **1**, 030902 (2025).

2. **A. J. Edwards**, K. Doleh, L. Humphrey, C. M. Linseisen, M. D. Kitcher, J. M. Martin, C. Cui, J. A. C. Incorvia, F. Garcia-Sanchez, N. Hassan, J. S. Friedman, Kinematic model of magnetic domain wall motion for fast; high-accuracy simulations, *Physical Review Applied* **24**, 034020 (2025).

3. **A. J. Edwards**, E. C. Usih, P. Zhou, B. A. Hill, S. Martindell, T. Qi, D. Biswas, X. Hu, S. Mysore Panduranga, J. S. Friedman, Experimental Demonstration of Stochastic Bayesian Inference Using Müller C-Elements, *IEEE Transactions on Very Large Scale Integration Systems* **33**:11 (2025).

4. P. Zhou, **A. J. Edwards**, F. B. Mancoff, S. Aggarwal, S. K. Heinrich-Barna, J. S. Friedman, Neuromorphic Hebbian learning with magnetic tunnel junctions, *communications engineering* **4**, 142 (2025).

5. **A. J. Edwards**, N. Hassan, J. D. Arzate, A. N. Chin, D. Bhattacharya, M. M. Shihab, P. Zhou, X. Hu, J. Atulasimha, Y. Makris, J. S. Friedman, Physically Secure Logic Locking with Nanomagnet Logic, *IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems* **44**:1, 105-118 (2025).

6. E. C. Usih, N. Hassan, **A. J. Edwards**, F. Garcia-Sanchez, P. Khalili Amiri, J. S. Friedman, Toggle SOT-MRAM Architecture with Self-Terminating Write Operation, *IEEE Transactions on Very Large Scale Integration Systems* **33**:2, 337-345 (2025).

7. **A. J. Edwards**, G. Krylov, J. S. Friedman, E. G. Friedman, Harnessing Stochasticity for Superconductive Multi-Layer Spike-Rate-Coded Neuromorphic Networks, *Neuromorphic Computing and Engineering* **4**, 014005 (2024).

8. **A. J. Edwards**, D. Bhattacharya, P. Zhou, N. R. McDonald, W. Al Misba, L. Loomis, F. Garcia-Sanchez, N. Hassan, X. Hu, M. F. Chowdhury, C. D. Thiem, J. Atulasimha, J. S. Friedman, Passive Frustrated Nanomagnet Reservoir Computing, *Communications Physics* **6**, 215 (2023).

9. X. Hu, C. Cui, S. Liu, F. Garcia-Sanchez, W. H. Brigner, B. W. Walker, **A. J. Edwards**, T. P. Xiao, C. Bennett, N. Hassan, M. P. Frank, J. A. C. Incorvia, J. S. Friedman, Magnetic Skyrmions and Domain Walls for Logical and Neuromorphic Computing, *Neuromorphic Computing and Engineering* **3**:2, 022003 (2023).

10. M. F. Chowdhury, W. Al Misba, M. M. Rajib, **A. J. Edwards**, D. Bhattacharya, M. S. Varghese, J. S. Friedman, J. Atulasimha, Focused Surface Acoustic Wave Induced Nano-Oscillator based Reservoir Computing, *Applied Physics Letters* **121**:10, 102402 (2022).

11. X. Hu, B. W. Walker, F. Garcia-Sanchez, **A. J. Edwards**, P. Zhou, J. A. C. Incorvia, A. Paler, M. P. Frank, J. S. Friedman, Logical and Physical Reversibility of Conservative Skyrmion Logic, *IEEE Magnetics Letters* **13**, 4503805 (2022).

## ***Patents***

1. J. S. Friedman, M. Nourani, H. Dave, **A. J. Edwards**, X. Hu, A. A. Zaki, N. C. Parker, J. H. Harvey, T. Kim, Systems and Methods for Seizure Detection, US Patent 12,575,783 B2, Mar 2026.

## ***arXiv Preprints***

1. **A. J. Edwards**, S. T. Le, N. W. G. Smith, E. C. Usih, A. Thomas, C. J. K. Richardson, N. A. Blumenschein, A. T. Hanbicki, A. L. Friedman, J. S. Friedman, Magnetic Field-Mediated Superconducting Logic, *arXiv* :2602.07146 (2026).

2. K. Doleh, L. Humphrey, C. M. Linseisen, M. D. Kitcher, J. M. Martin, C. Cui, J. A. C. Incorvia, F. Garcia-Sanchez, N. Hassan, **A. J. Edwards** , J. S. Friedman, Kinematic Model of Magnetic Domain Wall Motion for Fast, High-Accuracy Simulations , *arXiv* :2406.00225 (2024).

3. P. Zhou, **A. J. Edwards** , F. B. Mancoff, S. Aggarwal, S. K. Heinrich-Barna, J. S. Friedman, Neuromorphic Hebbian Learning with Magnetic Tunnel Junction Synapses , *arXiv* :2308.11011 (2023).

4. B. W. Walker, A. J. Edwards, X. Hu, M. P. Frank, F. Garcia-Sanchez, J. S. Friedman, Near-Landauer Reversible Skyrmion Logic with Voltage-Based Propagation, *arXiv*:2301.10700 (2023).

5. P. Zhou, **A. J. Edwards** , F. B. Mancoff, D. Houssameddine, S. Aggarwal, J. S. Friedman, Experimental Demonstration of Neuromorphic Network with STT MTJ Synapses , *arXiv* :2112.04749 (2021).

6. A. A. Zaki, N. C. Parker, T.-Y. Kim, S. Ishak, T. E. Stovall, G. Peng, H. Dave, J. Harvey, M. Nourani, X. Hu, **A. J. Edwards** , J. S. Friedman, Analog Seizure Detection for Implanted Responsive Neurostimulation , *arXiv* : 2106.06590 (2021).

## ***Conference Papers & Presentations***

1. **A. J. Edwards**, Nicholas Blumenschein, Nanomagnet Reservoir Computing Hardware Platform, *IEEE Mag.Soc. Washington/Northern VA Jt Chapter* - Invited, NIST, Gaithersburg, Feb. 2026

2. **A. J. Edwards**, S. Le, J. Schwartz, E. C. Usih, N. A. Blumenschein, A. T. Hanbicki, A. L. Friedman, J. S. Friedman, Magnetic Field-Mediated Superconducting Logic, *Government Microcircuit Applications & Critical Technology Conference*, Mar. 2025.

3. B. W. Walker, K. Muthukrishnan, E. A. Rivas, R. Thapa, X. Hu, M. P. Frank, F. Garcia-Sanchez, **A. J. Edwards**, J. S. Friedman, Near-Landauer Pipelined Voltage-Propagated Skyrmion Logic, *IEEE Conference on Advances in Magnetics*, Feb. 2025.

4. **A. J. Edwards**, K. Doleh, L. M. Humphrey, C. M. Linseisen, M. D. Kitcher, J. M. Martin, C. Cui, J. A. C. Incorvia, F. Garcia-Sanchez, N. Hassan, J. S. Friedman, Kinematic Model of Magnetic Domain Wall Motion for Fast, High-Accuracy Simulations, *Joint IEEE International Magnetics Conference & Conference on Magnetism and Magnetic Materials*, Jan. 2025.

5. B. W. Walker, K. Muthukrishnan, R. Thapa, E. Rivas, X. Hu, M. P. Frank, F. Garcia-Sanchez, **A. J. Edwards**, J. S. Friedman, Pipelined Voltage-Propagated Skyrmion Logic with High Thermal Stability, *Joint IEEE International Magnetics Conference & Conference on Magnetism and Magnetic Materials*, Jan. 2025.

6. B. W. Walker, K. Muthukrishnan, R. Thapa, E. A. Rivas, X. Hu, M. P. Frank, F. Garcia-Sanchez, **A. J. Edwards** , J. S. Friedman, Voltage-Propagated Reversible Skyrmion Logic with near-Landauer Efficiency , *International Conference on Magnetism* , June-July 2024.

7. **A. J. Edwards** , E. C. Usih, P. Zhou, B. A. Hill, S. Martindell, T. Qi, D. Biswas, X. Hu, S. M. Panduranga, J. S. Friedman, Experimental Demonstration of Stochastic Bayesian Inference using Muller C-Elements , *Government Microcircuit Applications & Critical Technology Conference* , Mar. 2024.

8. **A. J. Edwards** , G. Krylov, J. S. Friedman, E. G. Friedman, Deep Neuromorphic Networks with Superconducting Single Flux Quanta , *Government Microcircuit Applications & Critical Technology Conference* , Mar. 2024.

9. P. Zhou, **A. J. Edwards** , F. B. Mancoff, S. Aggarwal, S. K. Heinrich-Barna, J. S. Friedman, Neuromorphic Hebbian Learning with Magnetic Tunnel Junction Synapses , *Government Microcircuit Applications & Critical Technology Conference* , Mar. 2024.

10. J. D. Arzate, A. N. Chin, Y. Makris, **A. J. Edwards** , J. S. Friedman, Physically Secure Hardware Redaction with Strain-Shielded Nanomagnetic Logic , *Government Microcircuit Applications & Critical Technology Conference* , Mar. 2024.

11. P. Zhou, **A. J. Edwards** , F. B. Mancoff, S. Aggarwal, J. S. Friedman, Experimental Demonstration of Unsupervised Online Learning with Stochastic STT-MTJ Switching , *Conference on Magnetism and Magnetic Materials* , Oct.-Nov. 2023.

12. B. W. Walker, K. Muthukrishnan, R. Thapa, X. Hu, M. P. Frank, F. Garcia-Sanchez, **A. J. Edwards** , J. S. Friedman, Near-Landauer Reversible Skyrmion Logic with Voltage-Based Propagation , *Conference on Magnetism and Magnetic Materials* , Oct.-Nov. 2023.

13. D. Biswas, S. R. Evans, M. J. Rickard, A. Fowler, Y. Makris, N. Hassan, **A. J. Edwards** , J. S. Friedman, Hybrid MRAM/SRAM Bit Cell with Self-Terminating MTJ Readout , *Conference on Magnetism and Magnetic Materials* , Oct.-Nov. 2023.

14. A. N. Chin, J. D. Arzate, Y. Makris, N. Hassan, **A. J. Edwards** , J. S. Friedman, Hybrid Hardware Security Systems with Strain-Modulated Magnetic Anisotropy , *Conference on Magnetism and Magnetic Materials* , Oct.-Nov. 2023.

15. X. Hu, X. Li, P. Zhou, B. W. Walker, **A. J. Edwards** , J. A. C. Incorvia, J. S. Friedman, High-Performance Low-Power Chiplet Design with Emerging Technologies , *IEEE International System-on-Chip Conference* , Sep. 2023.

16. B. W. Walker, F. Garcia-Sanchez, **A. J. Edwards** , X. Hu, M. P. Frank, J. S. Friedman, Near Landauer Reversible Skyrmion Logic with Voltage-Based Propagation , *Joint European Magnetic Symposia* , Aug. 2023.

17. B. W. Walker, **A. J. Edwards** , X. Hu, M. P. Frank, F. Garcia-Sanchez, J. S. Friedman, Near-Landauer Reversible Skyrmion Logic with Voltage-Based Propagation , *Government Microcircuit Applications & Critical Technology Conference* , Mar. 2023.

18. A. N. Chin, J. D. Arzate, Y. Makris, N. Hassan, **A. J. Edwards** , J. S. Friedman, Physically Secure Hardware Redaction and Logic Locking with Hybrid Logic Systems , *Government Microcircuit Applications & Critical Technology Conference* , Mar. 2023.

19. S. R. Evans, M. J. Rickard, A. Fowler, Y. Makris, N. Hassan, **A. J. Edwards** , D. Biswas, J. S. Friedman, Non-Volatile Memory Circuit with Self-Terminating Read Current , *Government Microcircuit Applications & Critical Technology Conference* , Mar. 2023.

20. **A. J. Edwards** , N. Hassan, D. Bhattacharya, M. M. Shihab, P. Zhou, X. Hu, J. Atulasimha, Y. Makris, J. S. Friedman, Strain-Modulated Magnetic Anisotropy for Physically Secure Logic Locking , *Conference on Magnetism and Magnetic Materials* , Oct.-Nov. 2022.

21. P. Zhou, **A. J. Edwards** , F. B. Mancoff, S. Aggarwal, J. S. Friedman, Binarized Neuromorphic Inference Network with STT MTJ Synapses , *Conference on Magnetism and Magnetic Materials* , Oct.-Nov. 2022.

22. J. S. Friedman, P. Zhou, X. Hu, **A. J. Edwards** , N. Hassan, W. H. Brigner, F. Garcia-Sanchez, C. H. Bennett, A. Velasquez, J. A. C. Incorvia, F. B. Mancoff, S. Aggarwal, Unsupervised Learning and Recognition with Single-Domain and Domain-Wall MTJs , *Tohoku University Center for Science and Innovation in Spintronics Symposium* , Oct. 2022 (invited).

23. **A. J. Edwards** , D. Bhattacharya, P. Zhou, J. Atulasimha, J. S. Friedman, Passive Frustrated Nanomagnet Reservoir Computing , *IEEE The Magnetic Recording Conference* , Aug. 2022 (invited).

24. P. Zhou, **A. J. Edwards** , F. B. Mancoff, S. Aggarwal, J. S. Friedman, Experimental Demonstration of Neuromorphic Network with STT-MTJ Synapses , *IEEE The Magnetic Recording Conference* , Aug. 2022 (invited).

25. P. Zhou, **A. J. Edwards** , F. B. Mancoff, D. Houssameddine, S. Aggarwal, J. S. Friedman, Binarized Neuromorphic Inference Network with STT MTJ Synapses , *SPIE Spintronics* , Aug. 2022 (invited).

26. **A. J. Edwards** , D. Bhattacharya, P. Zhou, N. R. McDonald, L. Loomis, C. D. Thiem, J. Atulasimha, J. S. Friedman, Frustrated Arrays of Nanomagnets for Efficient Reservoir Computing , *SPIE Spintronics* , Aug. 2022 (invited).

27. N. Hassan, **A. J. Edwards** , D. Bhattacharya, M. M. Shihab, P. Zhou, X. Hu, J. Atulasimha, Y. Makris, J. S. Friedman, Secure Logic Locking with Hybrid CMOS-Nanomagnet Logic , *SPIE Spintronics* , Aug. 2022 (invited).

28. P. Zhou, **A. J. Edwards** , F. B. Mancoff, D. Houssameddine, S. Aggarwal, J. S. Friedman, Binarized Neuromorphic Computing with STT MTJ Synapses , *International Conference on Neuromorphic Systems* , July 2022.

29. **A. J. Edwards** , D. Bhattacharya, P. Zhou, N. R. McDonald, L. Loomis, C. D. Thiem, J. Atulasimha, J. S. Friedman, Frustrated Arrays of Nanomagnets for Efficient Reservoir Computing , *ACM Neuro-Inspired Computational Elements Workshop* , Mar.-Apr. 2022.

30. **A. J. Edwards** , N. Hassan, D. Bhattacharya, M. M. Shihab, P. Zhou, X. Hu, J. Atulasimha, Y. Makris, J. S. Friedman, Physically and Algorithmically Secure Logic Locking with Hybrid CMOS/Nanomagnet Logic Circuits , *Design, Automation & Test in Europe* , Mar. 2022 (invited).

31. **A. J. Edwards** , D. Bhattacharya, P. Zhou, N. R. McDonald, L. Loomis, C. D. Thiem, J. Atulasimha, J. S. Friedman, Passive Nanomagnet Reservoir Computing with Low-Power Fading Memory Dynamics , *Government Microcircuit Applications & Critical Technology Conference* , Mar. 2022.

32. **A. J. Edwards** , N. Hassan, D. Bhattacharya, M. M. Shihab, P. Zhou, X. Hu, J. Atulasimha, Y. Makris, J. S. Friedman, Physically Secure Logic Locking with Hybrid CMOS-Nanomagnet Logic , *Government Microcircuit Applications & Critical Technology Conference* , Mar. 2022.

33. P. Zhou, **A. J. Edwards** , F. B. Mancoff, D. Houssameddine, S. Aggarwal, J. S. Friedman, Experimental Demonstration of Neuromorphic Network with STT MTJ Synapses , *Government Microcircuit Applications & Critical Technology Conference* , Mar. 2022.

34. M. F. F. Chowdhury, **A. J. Edwards** , M. M. Rajib, W. Al Misba, D. Bhattacharya, J. S. Friedman, J. Atulasimha, Focused Surface Acoustic Wave Induced Nano-Oscillator Based Reservoir Computing , *Government Microcircuit Applications & Critical Technology Conference* , Mar. 2022.

35. **A. J. Edwards** , N. Hassan, D. Bhattacharya, M. M. Shihab, P. Zhou, X. Hu, J. Atulasimha, Y. Makris, J. S. Friedman, Physically and Algorithmically Secure Logic Locking with Hybrid CMOS-Nanomagnet Logic , *APS March Meeting* , Mar. 2022.

36. M. F. F. Chowdhury, W. Al Misba, D. Bhattacharya, **A. J. Edwards** , J. S. Friedman, J. Atulasimha, Surface Acoustic Wave Induced Nano-oscillator Based Reservoir Computing , *Joint IEEE International Magnetics Conference & Conference on Magnetism and Magnetic Materials* , Jan. 2022.

37. K. Doleh, C. M. Linseisen, L. M. Humphrey, F. Garcia-Sanchez, X. Hu, W. H. Brigner, C. Cui, J. M. Martin, J. A. C. Incorvia, N. Hassan, **A. J. Edwards** , J. S. Friedman, Kinematic Domain Wall Model for Large-Scale Neuromorphic Network Simulation , *Joint IEEE International Magnetics Conference & Conference on Magnetism and Magnetic Materials* , Jan. 2022.

38. **A. J. Edwards** , D. Bhattacharya, P. Zhou, N. R. McDonald, L. Loomis, C. D. Thiem, J. Atulasimha, J. S. Friedman, Frustrated Arrays of Nanomagnets for Efficient Reservoir Computing , *Joint IEEE International Magnetics Conference & Conference on Magnetism and Magnetic Materials* , Jan. 2022.

39. P. Zhou, **A. J. Edwards** , F. B. Mancoff, D. Houssameddine, S. Aggarwal, J. S. Friedman, Experimental Demonstration of Neuromorphic Network with STT MTJ Synapses , *IEEE International Electron Devices Meeting - MRAM Poster Session* , Dec. 2021.

40. N. Hassan, **A. J. Edwards** , D. Bhattacharya, M. M. Shihab, V. Venkat, P. Zhou, X. Hu, S. Kundu, A. P. Kuruvila, K. Basu, J. Atulasimha, Y. Makris, J. S. Friedman, Secure Logic Locking with Strain-Protected Nanomagnet Logic , *Design Automation Conference* , Dec. 2021.

41. **A. J. Edwards** , D. Bhattacharya, P. Zhou, N. R. McDonald, L. Loomis, C. D. Thiem, J. Atulasimha, J. S. Friedman, Frustrated Arrays of Nanomagnets for Efficient Reservoir Computing , *IEEE International Conference on Rebooting Computing* , Nov. - Dec. 2021.

42. **A. J. Edwards** , D. Bhattacharya, P. Zhou, N. R. McDonald, L. Loomis, C. D. Thiem, J. Atulasimha, J. S. Friedman, Frustrated Arrays of Nanomagnets for Reservoir Computing , *Government Microcircuit Applications & Critical Technology Conference* , Mar. 2021.

43. **A. J. Edwards** , P. Zhou, D. Bhattacharya, N. R. McDonald, F. Garcia-Sanchez, L. Loomis, C. D. Thiem, J. Atulasimha, J. S. Friedman, Reservoir Computing with Frustrated Nanomagnet Arrays , *APS March Meeting* , Mar. 2021.

44. P. Zhou, **A. J. Edwards** , N. R. McDonald, L. Loomis, C. D. Thiem, J. S. Friedman, Reservoir Computing with Planar Nanomagnet Arrays , *Conference on Magnetism and Magnetic Materials* , Nov. 2020.

45. **A. J. Edwards** , P. Zhou, N. R. McDonald, L. Loomis, C. D. Thiem, J. S. Friedman, Reservoir Computing with Planar Nanomagnet Arrays , *International Conference on Neuromorphic Systems* , July 2020.

46. X. Hu, **A. J. Edwards** , T. P. Xiao, C. H. Bennett, J. A. C. Incorvia, M. J. Marinella, J. S. Friedman, Process Variation Model and Analysis for Domain Wall-Magnetic Tunnel Junction Logic , *IEEE International Symposium on Circuits & Systems* , Oct. 2020.

47. P. Zhou, N. R. McDonald, **A. J. Edwards** , L. Loomis, C. D. Thiem, J. S. Friedman, Reservoir Computing with Planar Nanomagnet Arrays , *Government Microcircuit Applications & Critical Technology Conference* , Mar. 2020.

# AWARDS & FELLOWSHIPS

- **Erik Jonsson School of Engineering and Computer Science Best Teaching Assistant Award**
  The University of Texas at Dallas, Richardson, TX — Spring 2021
- **US Department of Energy Office of Science Graduate Student Research Award**
  Sandia National Laboratories, Albuquerque, NM — June 2022 - Sep. 2022
- **Chateaubriand Research Fellowship**
  Centre de Nanosciences et de Nanotechnologies, CNRS, Université Paris-Saclay, Palaiseau, FR — Sep. 2023 - Jan. 2024

# TEACHING & MENTORING EXPERIENCE

## *Teaching*

**The University of Texas at Dallas** — *Teaching Assistant*

- CE/EE 3301 - Electrical Network Analysis — Spring 2021
- CE/EE 3301 - Electrical Network Analysis — Fall 2021
- CE/EECT 6325 - VLSI Design — Spring 2022

## *Research Mentoring*

- **Omar Abioye**, The University of Texas at Dallas (B.S.)
- **Jared Arzate**, The University of Texas at Austin (B.S.)
- **Disha Biswas**, The University of Texas at Dallas (Ph.D.)
- **Wesley Brigner**, The University of Texas at Dallas (Ph.D.)
- **Lucas Capone**, The University of Texas at Dallas (B.S.)
- **Alex Chin**, The University of Texas at Dallas (B.S.)
- **Evan Dobbs**, The University of Texas at Dallas (Ph.D.)
- **Kristi Doleh**, The University of Texas at Dallas (B.S.)
- **Sarah Evans**, The University of Texas at Dallas (B.S.)
- **Xavier Hernandez**, The University of Texas at Dallas (B.S.)
- **Brighton Hill**, The University of Texas at Dallas (M.S.)
- **Leonard Humphrey**, The University of Texas at Dallas (B.S.)
- **Sam Ishak**, The University of Texas at Dallas (B.S.)

- **Isaac Jochimsen**, The University of Texas at Dallas (B.S.)
- **Kyle Keeton**, The University of Texas at Dallas (Ph.D.)
- **Jeonghwan Kim**, The University of Texas at Dallas (Ph.D.)
- **Tae Yoon Kim**, The University of Texas at Dallas (M.S.)
- **Ash Kortz**, The University of Texas at Dallas (B.S.)
- **Chandler Linseisen**, The University of Texas at Dallas (B.S.)
- **Joanna Martin**, The University of Texas at Dallas (B.S.)
- **Kaushik Muthukrishnan**, The University of Texas at Dallas (B.S.)
- **Shreya Mysore Panduranga**, The University of Texas at Dallas (M.S.)
- **Noah Parker**, The University of Texas at Dallas (M.S.)
- **Tianxi Qi**, The University of Texas at Dallas (Ph.D.)
- **Surya Ramesh Kumar**, The University of Texas at Dallas (M.S.)
- **Mitch Rickard**, The University of Texas at Dallas (B.S.)
- **Eduardo Rivas**, The University of Texas at Dallas (B.S.)
- **Jonathan Rusnak**, The University of Texas at Dallas (B.S.)
- **Anusha Saha**, The University of Texas at Dallas (B.S.)
- **Kevin Shi**, The University of Texas at Dallas (B.S.)
- **Harshit Sood**, The University of Texas at Dallas (M.S.)
- **Ty Stovall**, The University of Texas at Dallas (M.S.)
- **Aishwarya Surapuram**, The University of Texas at Dallas (M.S.)
- **Alex Tellez**, The University of Texas at Dallas (B.S.)
- **Raj Thapa**, The University of Texas at Dallas (B.S.)
- **Ebenezer Usih**, The University of Texas at Dallas (Ph.D.)
- **Mathew Varghese**, The University of Texas at Dallas (B.S.)
- **Ben Walker**, The University of Texas at Dallas (Ph.D.)
- **Abbas Zaki**, The University of Texas at Dallas (B.S.)

# INDUSTRY EXPERIENCE

**Texas Instruments Incorporated** Summer Intern

- **Digital IP Design:** 2017
  Designed wrapper IP to interface 3rd party IP with proprietary bus.
- **Digital IP Design Verification:** 2018
  Verified multiple features of multiple IP with UVM.

- **Digital IP Design Verification:** 2019
  Created formal flow with Jasper Gold to verify safety signals.

- **Design for Test:** 2020
  Used Cadence EDA to automate connectivity checks to align spec and implementation.

# PROFESSIONAL SERVICE

## *Session Chair:*

- **IEEE-NANO 2025:** Three-dimensional Nanoarchitectures and Nanocomplexes

## *Conference Program Committee:*

- **GLSVLSI 2026**
- **NICE 2026**

## *Reviewer: Journals*

- **Advanced Functional Materials**
- **Journal of Applied Physics**
- **Journal of Exploratory Solid-State Computational Devices and Circuits**
- **Microelectronics Journal**
- **Nature Communications**
- **Neuromorphic Computing and Engineering**
- **Transactions on Electron Devices**
- **Transactions on Emerging Topics in Computing**
- **Transactions on Nanotechnology**
- **Transactions on Parallel and Distributed Systems**

## *Reviewer: Conferences*

- **AICAS 2022**
- **DATE 2020**
- **DATE 2021**
- **DATE 2022**
- **GLSVLSI 2022**
- **ICNANO 2022**
- **ICONS 2022**
- **IEEE DCAS 2022**
- **IEEE HOST 2023**
- **IEEE ICECS 2020**
- **IEEE ISCAS 2020**
- **IEEE NMDC 2021**
- **LASCAS 2021**
- **NICE 2026**
- **VLSI-SOC 2021**