Austin J. Brockmeier

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Education

Ph.D., Electrical and Computer Engineering, University of Florida, Gainesville, Florida 5/2014
"Learning and exploiting recurrent patterns in neural data", Advisor: Jose C. Principe

B.S., Computer Engineering, University of Nebraska–Lincoln (Omaha campus) 5/2009
Highest Distinction, 2nd Major: Mathematics, Minor: Computer Science (GPA: 4.0/4.0)

Experience

Assistant Professor University of Delaware, Newark, Delaware 12/2018–Present
Electrical and Computer Engineering; Computer and Information Sciences
Data Science Institute (Resident Faculty)

Research Fellow University of Manchester, United Kingdom 3/2017–10/2018
School of Computer Science, Mentor: Sophia Ananiadou

Research Associate University of Liverpool, United Kingdom 6/2014–2/2017
School of Electrical Engineering, Electronics & Computer Science, Mentor: John Y. Goulermas

Graduate Research Assistant University of Florida 5/2010–5/2014
Department of Electrical and Computer Engineering, Advisor: Jose C. Principe

Research Assistant University of Nebraska–Lincoln (Omaha Campus) Summer 2008/2009
Department of Computer and Electronics Engineering, Research Advisor: Hamid Sharif

Electronics Engineer Cenatmed, LLC, Omaha, NE 4/2008–7/2009

IT Operations Intern Union Pacific Railroad, Omaha, NE 8/2006–8/2008

Honors and Awards

International and National
- Top Reviewer, Neural Information Processing Systems (NeurIPS) 2025
- IEEE Senior Member 2025
- Highlighted Reviewer of ICLR 2022 (top 8.7%=543/6207) 2022
- Top 5 List, Neural Engineering Community Award, IEEE EMBS NER Conf. 2021
- Top 200 Reviewer, Neural Information Processing Systems (NeurIPS) 2018
- Finalist, IEEE EMBS Conference Student Paper Competition 2013
- Honorable Mention, NSF Graduate Research Fellowship 2009, 2010, 2011

University of Delaware, Graduate College
- Most Engaged Advisor/Advisee Award, NRT MIDAS Traineeship Program 2024

University of Delaware, College of Engineering
- Faculty Award for Excellence in Service and Community Engagement 2022

University of Florida
- Honorable Mention, Outstanding Service, Graduate Student Council 2014
- Graduate School Fellowship 2009–2013

University of Nebraska
- Dean's Award, College of Engineering 2009
- Outstanding Senior, Computer and Electronics Engineering 2009
- Undergraduate Major Honoree, Computer and Electronics Engineering 2009
- 1st Place Senior Thesis Design Team, Computer and Electronics Engineering 2009
- James Earl Mathematics Scholarship, Math. Dept., U. Nebraska Omaha 2008–2009
- Tau Beta Pi Distinguished Freshman Award 2006
- Walter Scott Jr. Scholarship, Peter Kiewit Institute 2005–2009
- University of Nebraska Regents Scholarship 2005–2009

Research

Publications

26 published journal publications with 5 more under review/revision; 32 accepted/published peer-reviewed conference/workshop papers with 4 more under review; 2 conference papers reviewed via extended abstract; and 7 papers to be submitted/resubmitted.
Total citations: 953, h-index: 16 (Google Scholar as of 11/9/2025)

Key: ⋆—graduate advisee, †—undergrad. advisee, ‡—mentored visiting scholar.

BOOK CHAPTER

A. J. Brockmeier and J. C. Príncipe, "Decoding algorithms for brain machine interfaces," in *Neural Engineering*, Bin He, Ed. Springer, 2013, pp. 223–257. (peer-reviewed)

PATENT

U.S. Patent 10,531,806. J. Principe and A. J. Brockmeier, "Brain state advisory system and methods using calibrated metrics and optimal time-series decomposition," 1/14/2020.

JOURNAL ARTICLES, UNDER REVIEW OR REVISION

JR5. A. Mulrooney†, Z. li⋆ and A. J. Brockmeier, "Contrastive Learning to Fine-Tune Feature Extraction Models for the Visual Cortex," *PLOS Computational Biology* (under review. Previous version available at *arXiv*, https://doi.org/10.48550/arXiv.2410.06067).

JR4. M. I. Cano Achuri‡, M. K. Lara, K. Abed Rabbo, B. T. Wilson, A. Meek⋆, J. M. Mahoney, A. E. Hernan, and A. J. Brockmeier, "Predicting seizure-model genotypes of mice from EEG waveforms," *Journal of Neural Engineering*, Special Issue on Epilepsy and Neural Engineering, (under review, available at bioRxiv).

JR3. W. F. Fortino, F. B. Bianco, P. Protopapas, D. Muthukrishna, and A. Brockmeier, "ABC-SN: Attention Based Classifier for Supernova Spectra," *Astronomical Journal*, (under review, available at arXiv:2507.22106v2).

JR2. B. Riaz⋆, A. Meek⋆, and A. J. Brockmeier, "Optimal Transport with Frequency Warping for Bags of Spectra," *IEEE Open Journal of Signal Processing*, (under revision).

JR1. Y. Karahan⋆, B. Riaz⋆, H. Phan⋆, M. Emigh, and A. J. Brockmeier, "Finding Landmarks of Covariate Shift with Max-Sliced Kernel Wasserstein Distance," *TMLR* (under revision).

JOURNAL ARTICLES, PEER-REVIEWED

J26. S. Bhowmik M. Anandakrishan, L. Klein, C. Arighi, M. Gioioso, C. Wu, A. Brockmeier, K. Vijay-Shanker, and C. Chen, "Integrating Text Mining and Knowledge Graph to Enhance Biopharmaceutical Process Optimization," *PLOS ONE*, (in press).

J25. H. Baker⋆, M. S. Emigh, and A. J. Brockmeier, "Weakly Supervised Object Segmentation by Background Conditional Divergence," *Transactions on Machine Learning Research (TMLR)* 2JJZhfGvMW, accepted 2025.

J24. K. M. Holton⋆ , S. Y. Chan, A. J. Brockmeier, and M.-H. Hall, "Latent Growth Models of Longitudinal Changes in Functional Connectivity during Early Stage Psychosis," *Neuroinformatics*, 23(3):43, 2025.

J23. C. C. Claros⋆, M. N. Anderson, W. Qian, A. J. Brockmeier, and T. A. Buckley, "A Machine Learning Model for Post-Concussion Musculoskeletal Injury Risk in Collegiate Athletes," *Sports Medicine*, 2025.

J22. K. M. Holton⋆ , A. Higgins, A. J. Brockmeier, and M.-H. Hall, "Uncovering key predictive channels and clinical variables in the gamma band auditory steady-state response in early-stage psychosis: a longitudinal study" *Acta Neuropsychiatrica*, Cambridge University Press, 37(e1), 2025.

J21. C. C. Claros-Olivares⋆ , R. G. Clements, G. McIlvain, C. L. Johnson, and A. J. Brockmeier, "MRI-based whole-brain elastography and volumetric measurements to predict brain age" *Biology Methods and Protocols*, Oxford University Press, bpae086, 2024.

J20. M. N. Anderson, C. C. Claros*, W. Qian, A. Brockmeier, and T. A. Buckley, "Integrative Data Analysis to Identify Persistent Post-Concussion Deficits and Subsequent Musculoskeletal Injury Risk: Project Structure and Methods," *BMJ Open Sport & Exercise Medicine*, 10(1), 2024.

J19. B. Riaz*, Y. Karahan*, and A. J. Brockmeier, "Partial Optimal Transport for Support Subset Selection," *Transactions on Machine Learning Research (TMLR)*, 75CcopPxIr, 2023.

J18. K. Holton*, S. Y. Chan, A. J. Brockmeier, D. Öngür, and M-H. Hall, "Exploring the influence of functional architecture on cortical thickness networks in early psychosis – A longitudinal study," *NeuroImage*, 274(120127), 2023.

J17. E. N. Hamulyák, A. J. Brockmeier, J. D. Killas, S. Ananiadou, S. Middeldorp, and A. M. Leroi, "Women's health in *The BMJ*: a data science history," *BMJ Open*, 10:e039759, 2020.

J15. A. J. Brockmeier, M. Ju, P. Przybyła, and S. Ananiadou, "Improving reference prioritisation with PICO recognition," *BMC Medical Informatics and Decision Making*, 19(256), 2019.

J16. X. Evangelopoulos, A. J. Brockmeier, T. Mu, J. Y. Goulermas, "Circular object arrangement using spherical embeddings," *Pattern Recognition*, 103(107192), 2020.

J14. P. Przybyła, A. J. Brockmeier, and S. Ananiadou, "Quantifying risk factors in medical reports with a context-aware linear model," *Journal of the American Medical Informatics Association*, 26(6):537–546, 2019.

J13. X. Evangelopoulos, A. J. Brockmeier, T. Mu, J. Y. Goulermas, "Continuation methods for approximate large scale object sequencing," *Machine Learning*, 108(4):595–626, 2019.

J12. P. Przybyła, A. J. Brockmeier, G. Kontonatsios, M.-A. Le Pogam, J. McNaught, E. von Elm, K. Nolan, and S. Ananiadou, "Prioritising references for systematic reviews with RobotAnalyst: A user study," *Research Synthesis Methods*, 9(3):470–488, 2018.

J11. A. J. Brockmeier, T. Mu, S. Ananiadou, and J. Y. Goulermas, "Self-tuned descriptive document clustering using a predictive network," *IEEE Transactions on Knowledge and Data Engineering*, 30(10):1929–1942, 2018.

J10. A. J. Brockmeier, T. Mu, S. Ananiadou, and J. Y. Goulermas, "Quantifying the informativeness of similarity measurements," *Journal of Machine Learning Research*, 18(76):1–61, 2017.

J9. G. Kontonatsios, A. J. Brockmeier, P. Przybyła, J. McNaught, T. Mu, J. Y. Goulermas, and S. Ananiadou, "A semi-supervised approach using label propagation to support citation screening," *Journal of Biomedical Informatics*, 72:67–76, 2017.

J8. J. S. Choi, A. J. Brockmeier, D. McNiel, L. von Kraus, J. C. Principe, and J. T. Francis, "Eliciting naturalistic cortical responses with a sensory prosthesis via optimized microstimulation," *Journal of Neural Engineering*, 13(5):056007, 2016.

J7. A. J. Brockmeier and J. C. Principe, "Learning recurrent waveforms within EEGs," *IEEE Transactions on Biomedical Engineering*, 63(1):43–54, 2016.

J6. M. S. Emigh, E. G. Kriminger, A. J. Brockmeier, J. C. Príncipe, and P. M. Pardalos, "Reinforcement learning in video games using nearest neighbor interpolation and metric learning," *IEEE Transactions on Computational Intelligence and AI in Games*, 8(1):56–66, 2016.

J5. J. C. Principe and A. J. Brockmeier, "Representing and decomposing neural potential signals," *Current Opinion in Neurobiology*, 31:13–17, 2015.

J4. A. J. Brockmeier, J. S. Choi, E. G. Kriminger, J. T. Francis, and J. C. Principe, "Neural decoding with kernel-based metric learning," *Neural Computation*, 26(6):1080–1107, 2014.

J3. L. Li, A. J. Brockmeier, J. S. Choi, J. T. Francis, J. C. Sanchez, and J. C. Príncipe, "A tensor-product-kernel framework for multiscale neural activity decoding and control," *Computational Intelligence and Neuroscience*, Article ID 87016, 2014.

J2. L. Li, I. M. Park, A. Brockmeier, B. Chen, S. Seth, J. T. Francis, J. C. Sanchez, and J. C. Principe, "Adaptive inverse control of neural spatiotemporal spike patterns with a reproducing kernel Hilbert space (RKHS) framework," *IEEE Transactions on Neural Systems and Rehabilitation Engineering*, 21(4):532–543, 2013.

J1. J. S. Choi, M. M. DiStasio, A. J. Brockmeier, and J. T. Francis, "An electric field model for prediction of somatosensory (S1) cortical field potentials induced by ventral posterior lateral (VPL) thalamic microstimulation," *IEEE Transactions on Neural Systems and Rehabilitation Engineering*, 20(2):161–169, 2012.

Conference Papers, Under Review

CR5. C. C. Claros-Olivares* and A. J. Brockmeier, "A Systematic Analysis of Out-of-Distribution Detection Under Representation and Training Paradigm Shifts," (under review, preprint available on *ArXiv*, https://www.arxiv.org/abs/2511.11934).

CR4. H. Baker* and A. J. Brockmeier, "Patch2Loc: Learning to Localize Patches for Unsupervised Brain Lesion Detection," (under review, preprint available on *ArXiv*, https://arxiv.org/pdf/2506.22504).

CR3. B. Riaz* and A. J. Brockmeier, "Neural Optimal Transport for Subset Alignment," (under review).

CR2. Z. Li*, H. Phan*, M. Emigh, and A. J. Brockmeier, "Disentangling Latent Embeddings with Sparse Linear Concept Subspaces (SLiCS)," (under review, preprint available on https://arxiv.org/abs/2508.20322v1).

CR1. Y. Liao* and A. J. Brockmeier"Anomaly Detection via Autoencoder Composite Features and NCE," (under review, preprint available on *ArXiv*, https://arxiv.org/pdf/2502.01920v2).

Conference Papers, Peer-Reviewed

C32. A. Meek*, C. H. Mendoza-Cardenas*, and A. J. Brockmeier,"Convolutional Monge Mapping between EEG Datasets to Support Independent Component Labeling," *NeurIPS 2025 Workshop on Learning from Time Series for Health (TS4H)* (accepted, in press, preprint available on *ArXiv*, https://doi.org/10.48550/arXiv.2509.01721).

C31. H. Baker* and A. J. Brockmeier,"Efficient Many-to-Many MRI Modality Translation via a Latent-Conditioned Vector-Quantized Network," *Int. IEEE/EMBS Conf. Neural Engineering (NER) 2025* (accepted for Nov. 2025).

C30. C. H. Mendoza-Cardenas*, A. Meek*, and A. J. Brockmeier, "Labeling EEG Components with a Bag of Waveforms from Learned Dictionaries," *ICLR 2023 Workshop on Time Series Representation Learning for Health*, 2023.

C29. J. K. Hoyos-Osorio, O. Skean, A. J. Brockmeier, and L. G. Sanchez Giraldo, "Representation Jensen-Renyi Divergence," *IEEE Int. Conf. Acoustics, Speech and Signal Processing (ICASSP)*, 2022.

C28. Y. Karahan*, B. Riaz*, and A. J. Brockmeier, "Kernel landmarks: An empirical statistical approach to detect covariate shift", *Workshop on Distribution Shifts, 35th Conference on Neural Information Processing Systems (NeurIPS 2021)*.

C27. A. J. Brockmeier, C. C. Claros Olivares*, M. S. Emigh, and L. G. Sanchez Giraldo "Identifying the instances associated with distribution shifts using the max-sliced Bures divergence", *Workshop on Distribution Shifts, 35th Conference on Neural Information Processing Systems (NeurIPS 2021)*.

C26. H. Baker* and A. J. Brockmeier, "Exploring latent networks in resting-state fMRI using voxel-to-voxel causal modeling feature selection", *Machine Learning for Health (ML4H) - Extended Abstract*, 2021.

C25. K. Holton*, S. Y. Chan, A. J. Brockmeier, D. Öngür, and M-H. Hall "Exploring the influences of functional connectivity architecture on cortical thickness networks in patients with early psychosis", *Machine Learning for Health (ML4H) - Extended Abstract* , 2021.

C24. C. H. Mendoza-Cardenas* and A. J. Brockmeier, "Shift-invariant waveform learning on epileptic ECoG", *IEEE Engineering in Medicine and Biology Society (EMBC)*, 2021.

C23. C. H. Mendoza-Cardenas* and A. J. Brockmeier, "Searching for waveforms on spatially-filtered epileptic ECoG", *Int. IEEE/EMBS Conf. Neural Engineering (NER)*, 2021.

C22. H. Baker* and A. J. Brockmeier, "Local and sparse linear causal models for fMRI resting-state signals", *Int. IEEE/EMBS Conf. Neural Engineering (NER)*, 2021.

C21. X. Evangelopoulos, A. J. Brockmeier, T. Mu, and J. Y. Goulermas, "A graduated non-convexity relaxation for large scale seriation," in *SIAM Int. Conf. Data Mining (SDM)*, 2017.

C20. M. Sato, A. J. Brockmeier, G. Kontonatsios, T. Mu, J. Y. Goulermas, J. Tsujii, and S. Ananiadou, "Distributed document and phrase co-embeddings for descriptive clustering," in *European Chapter of the Association for Computational Linguistics (EACL)*, 2017.

C19. A. J. Brockmeier and J. C. Principe, "Explicit versus implicit source estimation for blind multiple input single output system identification," in *IEEE Int. Conf. Acoustics, Speech and Signal Processing (ICASSP)*, 2015.

C18. E. Santana, A. J. Brockmeier, and J. C. Principe, "Joint optimization of algorithmic suites for EEG analysis," in *IEEE Engineering in Medicine and Biology Society (EMBC)*, 2014.

C17. A. J. Brockmeier, E. Santanna, L. Sanchez Giraldo, and J. Principe, "Projentropy: Using entropy to optimize spatial projections," in *IEEE Int. Conf. Acoustics, Speech and Signal Processing (ICASSP)*, 2014.

C16. A. J. Brockmeier, L. G. Giraldo, J. S. Choi, J. T. Francis, and J. C. Principe, "Learning multiscale neural metrics via entropy minimization," in *Int. IEEE/EMBS Conf. Neural Engineering (NER)*, 2013.

C15. A. J. Brockmeier, L. G. Sanchez Giraldo, M. S. Emigh, J. Bae, J. S. Choi, J. T. Francis, and J. C. Principe, "Information-theoretic metric learning: 2–D linear projections of neural data for visualization," in *IEEE Engineering in Medicine and Biology Society (EMBC)*, 2013.

C14. A. J. Brockmeier, J. C. Principe, A. H. Phan, and A. Cichocki, "A greedy algorithm for model selection of tensor decompositions," in *IEEE Int. Conf. Acoustics, Speech and Signal Processing (ICASSP)*, 2013.

C13. A.-H. Phan, A. Cichocki, P. Tichavsky, G. Luta, and A. Brockmeier, "Tensor completion through multiple Kronecker product decomposition," in *IEEE Int. Conf. Acoustics, Speech and Signal Processing (ICASSP)*, 2013.

C12. A. J. Brockmeier, M. K. Hazrati, W. J. Freeman, and J. C. Principe, "Locating spatial patterns of waveforms during sensory perception in scalp EEG," in *IEEE Engineering in Medicine and Biology Society (EMBC)*, 2012.

C11. A. J. Brockmeier, J. S. Choi, M. M. Emigh, J. T. Francis, and J. C. Principe, "Subspace matching thalamic microstimulation to tactile evoked potentials in rat somatosensory cortex," in *IEEE Engineering in Medicine and Biology Society (EMBC)*, 2012.

C10. B. H. Fadlallah, A. J. Brockmeier, S. Seth, L. Li, A. Keil, and J. C. Príncipe, "An association framework to analyze dependence structure in time series," in *IEEE Engineering in Medicine and Biology Society (EMBC)*, 2012.

C9. A. J. Brockmeier, B. Mahmoudi, J. C. Sanchez, and J. C. Principe, "Efficient temporal decomposition of local field potentials," in *IEEE Int. Work. Machine Learning for Signal Processing (MLSP)*, 2011.

C8. A. J. Brockmeier, J. S. Choi, M. M. DiStasio, J. T. Francis, and J. C. Principe, "Optimizing microstimulation using a reinforcement learning framework," in *IEEE Engineering in Medicine and Biology Society (EMBC)*, 2011.

C7. S. Craciun, A. J. Brockmeier, A. D. George, H. Lam, and J. C. Principe, "An information-theoretic approach to motor action decoding with a reconfigurable parallel architecture," in *IEEE Engineering in Medicine and Biology Society (EMBC)*, 2011.

C6. S. Seth, A. J. Brockmeier, J. S. Choi, M. Semework, J. T. Francis, and J. C. Principe, "Evaluating dependence in spike train metric spaces," in *Int. Joint Conf. Neural Networks (IJCNN)*, 2011.

C5. S. Seth, A. J. Brockmeier, and J. C. Principe, "A metric approach toward point process divergence," in *IEEE Int. Conf. Acoustics, Speech and Signal Processing (ICASSP)*, 2011.

C4. A. J. Brockmeier, E. G. Kriminger, J. C. Sanchez, and J. C. Principe, "Latent state visualization of neural firing rates," in *Int. IEEE/EMBS Conf. Neural Engineering (NER)*, 2011.

C3. L. Li, A. Brockmeier, J. T. Francis, J. C. Sanchez, and J. C. Principe, "An adaptive inverse controller for online somatosensory microstimulation optimization," in *Int. IEEE/EMBS Conf. Neural Engineering (NER)*, 2011.

C2. S. Seth, I. Park, A. Brockmeier, M. Semework, J. Choi, J. Francis, and J. Principe, "A novel family of non-parametric cumulative based divergences for point processes," in *Advances in Neural Information Processing Systems (NIPS)*, 2010.

C1. A. J. Brockmeier, I. Park, B. Mahmoudi, J. C. Sanchez, and J. C. Principe, "Spatio-temporal clustering of firing rates for neural state estimation," in *IEEE Engineering in Medicine and Biology Society (EMBC)*, 2010.

Conference Papers Refereed via Extended Abstract

E2. M. S. Emigh, H. Baker⋆, C. H. Mendoza-Cardenas⋆, and A. J. Brockmeier, "Weakly supervised automatic target masking for synthetic aperture sonar," *5th International Conference on Synthetic Aperture in Sonar and Radar*, Lerici, Italy, 2023.

E1. H. Phan⋆, M. J. Wardlaw, B. Kim, and A. J. Brockmeier, "Training a Machine Learning Model for Underwater Chemical Source Localization in Simulated Turbulent Flows," in *OCEANS 2022*, Hampton Roads, Virginia, 2022.

Working papers

W7. H. Baker⋆, M. B. Kroen, A. J. Brockmeier, and C. Johnson "Synthesizing Stiffness and Damping Ratio MRE Images from T1 Images Using Conditional Flow Matching in the Latent Space," (under revision).

W6. A. Meek⋆, E. Sprejer, I. Arcuschin, A. J. Brockmeier, and S. Basart,"Measuring Chain-of-Thought Monitorability through Faithfulness and Verbosity," (under revision, preprint available on *ArXiv*, https://arxiv.org/abs/2510.27378v1.

W5. J. Labombard⋆, H. Baker⋆, M. Emigh, K. Barner, and A. J. Brockmeier,"Supervised Domain Alignment via Bottleneck Divergence Minimization," (under revision).

W4. Y. Liao⋆ and A. J. Brockmeier, "Decoupled Jensen–Shannon Divergence," (in preparation).

W3. Y. Karahan⋆, B. Riaz⋆, and A. J. Brockmeier, "Fast Landmark Bures Distance for Interpreting the Divergence between Datasets," (in revision).

W2. J. Labombard⋆, C. C. Claros Olivares⋆, K. Barner, and A. J. Brockmeier, "Dynamic Data Fidelity Selection for Cost-Constrained Inference," (in revision).

W1. C. H. Mendoza-Cardenas⋆, A. Meek⋆, and A. J. Brockmeier, "Labeling EEG Independent Components from a Bag of Waveforms," (in preparation for *IEEE Transactions on Biomedical Engineering*).

Other Pre-prints

O2. O. Skean, J. K. Hoyos Osorio, A. J. Brockmeier, and L. G. Sanchez Giraldo, "DiME: Maximizing Mutual Information by a Difference of Matrix-Based Entropies," *arXiv*, https://arxiv.org/pdf/2301.08164.

O1. A. J. Brockmeier, Y. Karahan⋆, C. C. Claros⋆, C. H. Mendoza-Cardenas⋆, M. S. Emigh, and L. G. Sanchez Giraldo, "Max-sliced Bures Distance for Interpreting Discrepancies," https://openreview.net/forum?id=D2Fp_qheYu, 2021.

Abstracts

A15. E. T. Mans, H. Baker and A. J. Brockmeier, "Predicting the Spatial Origin of EEG Independent Components from their Spectral-Temporal Features'," *Int. IEEE/EMBS Conf. Neural Engineering (NER'25)* , 11/2025.

A14. C. Chen, S. Bhowmik, M. Anandakrishnan, L. Klein, C. Arighi, M. Gioioso, C. Wu, A. Brockmeier, and K. Vijay-Shanker, "Combining Text-Mining and Knowledge Graph Approach to Inform Glycan Profile Optimization in Biopharmaceutical Manufacturing," *9th Annual MidAtlantic Bioinformatics Conference*, Philadelphia, Pennsylvania, 10/2024.

A13. T. A. Buckley, A. Brockmeier, Qian, C. Claros, and M. Anderson "Predictors of Post-Concussion Musculoskeletal Injury Severity: An Integrated Data Analysis Approach," *United Kingdom Collaborating Centre on Injury and Illness Prevention in Sport: International Olympic Committee Research Centre*, Edinburgh, UK, 7/2024.

A12. M. S. Emigh, H. Baker, B. Riaz, J. L. Prater, J. J. Dale, Y. Li, and A. Brockmeier "Improving SAS automatic object recognition with sub-aperture imagery from circular SAS," *International Conference on Underwater Acoustics*, Bath, UK, 6/2024.

A11. T. A. Buckley, M. N. Anderson, A. Brockmeier, and W. Qian "Developing a Post-Concussion Injury Prediction Model," *International Olympic Committee Conference: Prevention of Injury and Illness in Sport*, Monaco City, Monaco, 2/2024.

A10. K. Holton, A. Higgins, A. J. Brockmeier, and M.–H. Hall "Uncovering Key Predictive Channels and Clinical Variables in the Gamma Band Auditory Steady-State Response in Early Stage Psychosis - a Longitudinal Study," in *11th International IEEE EMBS Conference on Neural Engineering (NER'23)*, Baltimore, Maryland, 4/2023.

A9. H. Baker and A. J. Brockmeier "Patch2Loc: Learning Representations to Localize MRI Patches for Abnormality Detection," in *11th International IEEE EMBS Conference on Neural Engineering (NER'23)*, Baltimore, Maryland, 4/2023.

A8. C. H. Mendoza-Cardenas, A. Meek, and A. J. Brockmeier, "Labeling EEG Components with a Bag of Waveforms from Learned Dictionaries," in *11th International IEEE EMBS Conference on Neural Engineering (NER'23)*, Baltimore, Maryland, 4/2023.

A7. G. McIlvain, R. Clements, C. C. Claros Olivares*, A. J. Brockmeier, C. L. Johnson "Mechanical property-based brain age prediction using artificial neural networks", *World Congress of Biomechanics*, Taipei, Taiwan, 7/2022.

A6. K. Holton*, S. Y. Chan, A. J. Brockmeier, D. Öngür, and M-H. Hall "Exploring the influences of functional connectivity architecture on cortical thickness networks in patients with early psychosis", *60th Annual Meeting of the American College of Neuropsychopharmacology*, San Juan, Puerto Rico, 12/2021.

5. K. Nolan, S. Ananiadou, P. Przybyła, A. J. Brockmeier, "RobotAnalyst: An online system to support citation screening in evidence reviewing," at *Global Evidence Summit*, Cape Town, South Africa, 9/2017.

4. S. Dura-Bernal, K. Li, A. J. Brockmeier, C. C. Kerr, S. A. Neymotin, J. C. Principe, J. T. Francis, and W. W. Lytton, "Modulation of virtual arm trajectories via microstimulation in a spiking model of sensorimotor cortex," at *23rd Ann. Computational Neuroscience Meeting: CNS*2014*, Québec City, Canada, 7/2014.

3. E. Kriminger, A. Brockmeier, L. Sanchez-Giraldo, and J. Principe. "Metric learning for invariant feature generation in reinforcement learning," at *Reinforcement Learning and Decision Making*, Princeton, New Jersey, 10/2013.

2. J. S. Choi, A. J. Brockmeier, M. Emigh, L. von Kraus, and J. T. Francis. "Optimizing multi-channel microstimulation pulse trains with a model-predictive controller," at *23rd Ann. Meeting of the Society for the Neural Control of Movement*, San Juan, Puerto Rico, 4/2013.

1. E. K. Anderson, A. J. Brockmeier, N. G. Reyero, D. S. Barber, and N. D. Denslow. "Developing and validating a novel method for selecting class-specific biomarkers in ecotoxicology: A case study using fathead minnow microarray data," at *31st Ann. National SETAC Conf.*, Portland, Oregon, 11/2010.

Invited Talks

5. "Divergence Metrics for Data Set Alignment and Generative Models," Unmanned Maritime Systems Technology, Program Review, Office of Naval Research, Georgia Tech Research Institute, Smyrna, GA, 1/28/2025.

4. "NextGen of Data Science: Trends and Challenges," NextGen Data Science Symposium, UD DSI Student Association and Fellows, University of Delaware, 12/7/2023.

3. "Machine learning methods for deciphering diagnostic patterns in brain structure and function," Interdisciplinary Neuroscience Graduate Program Seminar, University of Delaware, 5/10/2023.
2. "Finding patterns within brain waves", Moberg Analytics and Sparse Coding Lab, Drexel University, 8/13/2021.
1. "Mini Report by a JSPS Alumnus," *Japan Society for Promotion of Science (JSPS) Fellowship Info Session*, University of Delaware's Institute for Global Studies; Office of International Students & Scholars, Newark, Delaware, 11/21/2019.

Short Talks & Panels

9. Panelist, "Bioinformatics, Data Science, and AI: Driving collaborative team science in biomedicine, life sciences, and beyond", Delaware Bioinformatic Data Science Symposium, 10/23/2025.
8. AI4Health Industry Day, 1/31/2025.
7. AI Symposium, UD College of Engineering, 9/25/2023.
6. Army C5ISR, 8/10/2023.
5. "Immerse Delaware", Waters Corporation, 12/21/2021.
4. Lockheed Martin–Advanced Technology Laboratories, 10/5/2021.
3. Waters Corporation, 8/31/2021.
2. Chemours Company, 6/31/2021.
1. Panelist, "Breakout session: Data science and precision medicine," 2019 Delaware IDeAs Symposium, 11/7/2019.

Mentions in Media

7. UDaily "A game-changing tool" 4/15/2025 AAAS EurekAlert
6. UDaily "How old is your brain?" 3/24/2025
5. UDaily "AI at UD" 10/24/2024
4. UD Magazine "It's the end of the world as we know it" 10/20/2024
3. *Delaware Business Times* "UD's Data Science Institute Harnesses Data as a Tool for Good" 8/6/2024
2. Graduate College News "Big Data = Big Solutions" 3/21/2024
1. UDaily "Preventing further injury in athletes after concussion" 1/27/2024

Current Research Grants

- **Delaware ACCEL Interdisciplinary Collaboration Grant** 1/2026–12/2027
  "Uncovering Hidden EEG Biomarkers of Epilepsy Using Machine Learning", Role: **Lead PI** (MPI: Amanda Hernan, Nemours Children's Health) 1 research assistant for 20 months across 2 years (Total Direct: $96,828)
- **Delaware Community Foundation** 7/2025–6/2030
  "Expanding our Partnership: Steps Towards a Cure", Role: **Co-I** (PI: Christopher Martens, University of Delaware). Supports 1 month effort and 1 research assistant for 5 years (Total: $13,102,616)
- **Office of Naval Research** N00014-24-1-2259 3/2024–2/2027
  "Disentangled learning representations of sonar data for target recognition and semantic compression", Role: **Sole PI**. 1.5 months effort per year, supports 1 research assistant for 3 years ($370,000)
- **National Science Foundation** NSF 2108841 8/1/2021–7/31/2026
  "Detecting and studying light echoes in the era of Rubin and artificial intelligence", Role: **Co-PI**. 0.5 months effort in years 1 and 2 (PI: Federica Bianco, University of Delaware) (Total: $596,068)

As Senior Personnel for Education/Training Grants:

- **National Science Foundation** NSF 2125703 9/1/2021–8/31/2026
  "NRT-HDR: Computing and Data Science Training for Materials Innovation, Discovery, Analytics", Role: **Senior Personnel** (PI: Arthi Jayaraman, University of Delaware). 0.21 months effort in year 1 and 0.17 months in subsequent years (Total: $2,999,011)

– **National Science Foundation** NSF 2123264 9/15/2021–8/31/2026
"Collaborative Research: HDR DSC: Delaware and Mid-Atlantic Data Science Corps", Role: **Senior Personnel** (PI: Federica Bianco, University of Delaware). 0.5 and 0.25 months effort in years 1 and 2 (Total: $1,500,000)

Intramural:

– **University of Delaware Research Foundation** 6/1/2022–11/30/2025
UDRF: "Mapping and decoding the brain's activity during human-AI interaction" Role: **PI**. Supports 1 research assistant for 1 year and two undergraduate researchers (summer), and neuroimaging ($30,000 + $5,000 in REU support + $15,000 match)

Completed Research Grants

– **Delaware Community Foundation** 1/2024–6/2025
"Neural mechanisms of Alzheimer's disease risk and onset from modifiable lifestyle factors", Role: **Co-I** (PI: Christopher Martens, University of Delaware). Supports 1 month effort and 1 research assistant for 1 year (Total: $575,000)

– **Office of Naval Research** N00014-21-1-2300 4/2021–10/2024
"Interpretable maximal discrepancies metrics for analyzing and improving generative models", Role: **Sole PI**. 1.75 months effort per year, supports 1 research assistant for 3 years ($346,941)

– **Waters Technologies Corporation** 4/2023–4/2024
"Text Mining and Information Retrieval and Extraction", Role: **Co-PI** (PI: Vijay Shanker, University of Delaware). 0.3 months effort (Total: $372,593)

– **National Institutes of Health** R21 NS122033-01A 9/3/2021–7/31/2023
"Integrative Data Analysis to Identify Persistent Post-Concussion Deficits and Subsequent Musculoskeletal Injury Risk", Role: **Co-I** (PI: Thomas A. Buckley, University of Delaware), 0.85 months effort in years 1 and 2, supports 1 research assistant for 2 years (Total: $419,798)

– **Office of Naval Research** 6/1/2020–5/31/2022
(Subaward from *Minority Serving Institutions Science, Technology, Engineering and Mathematics Research & Development Consortium*) "Development of Bio-Inspired Nano-Sensors for Underwater Explosives and Hazardous Materials"
Role: **Co-PI** (PI: Bruce Kim, City College of New York). 0.75 months effort per year, supports 1 research assistant for 2 years (Subaward of $170,659)

Intramural:

– **Unidel Foundation**, UD's AI Center for Excellence Seed Grant 1/1/2024–6/30/2024
"Adaptive thermal emission design driven by AI" Role: **Co-PI** (PI: Xi Wang, University of Delaware). Supports 1 research assistant from Wang's group ($15,000)

– **Unidel Foundation**, UD's AI Center for Excellence Seed Grant 1/1/2023–6/30/2023
"Predicting after-effects of exoskeleton-assisted gait training to inform human-in-the-loop control optimization" Role: **Co-PI** (PI: Fabrizio Sergi, University of Delaware). In-kind undergraduate research support.

– **University of Delaware Research Foundation** 11/1/2019–10/31/2021
UDRF–SI: "Advancing machine learning for neuroimaging through topology-aware signal processing" Role: **PI** (Senior Mentor: Gonzalo Arce, University of Delaware). Supports 1 research assistant for 1.5 year ($30,000 + $15,000 match)

– **Unidel Foundation**, UD's Data Science Institute Mini-Grant 9/12/2019–5/31/2020
"Learning to predict systematic errors in machine learning models and alert an expert for improved synergistic performance" Role: **PI**. Supports master's student hourly research ($10,000)

Contributed to Project Description for Research Instrumentation:

– **National Science Foundation**: "MRI: Acquisition of a Big Data and High Performance Computing System to Catalyze Delaware Research and Education", Role: provided use case (PI: Rudolf Eigenmann, University of Delaware), in-kind support of computing access on DARWIN (Total: $1,399,992)

– JSPS Summer Program, NSF East Asia & Pacific Summer Institutes Fellow 2012
'Signal processing techniques to separate and analyze brainwaves',' hosted by Andrzej Cichocki, RIKEN Brain Science Institute, Japan.

CURRENT PH.D. STUDENTS

7. Alex Mulrooney (co-advisor D. Hong) Fall 2025—present
ECE First Year Fellowship, Gore Fellowship, Fall 2025

6. Austin J. Meek, Computer Science Fall 2022–present
Daniel L. Chester Graduate Fellow, 2024–present

5. Zhi Li (co-advisor J. Garcia-Frias) Fall 2022–present
ECE First Year Fellowship, Fall 2022

4. Justin Labombard (co-advisor K. Barner) Fall 2022–present
ECE Research Day Poster Award (Signal Processing, Communication, & Control Area) 5/7/2024
Senior Trainee, NRT: Computing & Data Science Training for Materials Innovation, Discovery, AnalyticS (MIDAS), 2025–2026
Trainee, NRT: Computing & Data Science Training for Materials Innovation, Discovery, AnalyticS (MIDAS), 2022–2024
ECE First Year Fellowship, Fall 2022

3. Claudio Cesar Claros Olivares Spring 2022–present
Bendett Fellowship Award, 2023
ECE Research Day Poster Award (Signal Processing, Communication, & Control Area) 5/8/2024

2. Hassan Baker Spring 2020–Fall 2025
Summer Doctoral Fellowship, Graduate College, Summer 2025
President, DSI Student Association, 2022—2024
Gore Fellowship, 2021

1. Bilal Riaz Fall 2019–Fall 2025
HEC Scholarship, US-Pakistan Knowledge Corridor, Higher Education Committee, 2019–2024

PAST GRADUATE RESEARCH STUDENTS

(* active collaboration on further publications, † change of advisor)

Yalin Liao, Ph.D., ECE Fall 2022†–Spring 2025*
Current position: Post-doctoral Researcher, Moffitt Cancer Center

Yüksel Karahan, Ph.D., ECE Spring 2019†–Fall 2024*
Current position: Assistant Professor, National University
Past position: Data Science Fellow, Delaware Data Innovation Lab
ECE Research Day Poster Award (Signal Processing, Communication, & Control Area) 5/4/2022

Kristina Holton, Ph.D., Bioinformatics Data Science Spring 2020–Spring 2024*
Current position: Bioinformatician, Harvard University & Harvard Medical School
Best Poster Award, DSI's 2021 Delaware Data Science Symposium

Carlos H. Mendoza-Cardenas, Ph.D., ECE Winter 2019†–Winter 2023*
Current position: Applied Scientist, Twitch

Hau Van Phan, M.S., ECE M.S., Summer 2022
Current position: Machine Learning Engineer, Qlik

UNDERGRADUATE RESEARCHERS (* continuing collaboration on publications)

Eric Mans, UD ECE REU Summer 2025*

Vance Steele, UD ECE REU Summer 2024

David Cardenas (co-mentored by Dr. Federica Bianco), Data Science Corps Summer 2024

Alex Mulrooney, UD Summer Scholars Program Summer 2022 & 2023
Research Assistant Fall 2023–Spring 2024*

Travis Deputy, UD ECE REU Summer 2023

Evan Curtin, UD Summer Scholars Program Summer 2021

Justin Labombard, UD Summer Scholars Program Summer 2021

Thomas Pisklak, UD Summer Scholars Program Summer 2021

Visiting Scholars (* continuing collaboration on publications)

Maria Isabel Cano Achuri, Universidad de Antioquia, Colombia	Summer–Fall 2023*
Karen Andrea Fonseca, Universidad Industrial de Santander, Colombia	Summer 2022
Andres Nicolas Lopez, MSc., National University of Colombia, Colombia	Summer 2021
Edwin Salcedo, M.Sc., M.B.A., Bolivian Catholic University, Bolivia	Summer 2019
Jose Luis Falla, M.Sc., National University of Colombia, Bogotá, Colombia (co-mentored with Drs. S. Singh and J. Garcia-Frias)	Summer 2019

Teaching

Courses

University of Delaware, Newark, Delaware, USA

Instructor, Large Scale Machine Learning (ELEG/FSAN/CISC 817) Fall semesters: 2019–2025
Developed and delivered as a new course serving as a second and capstone course in machine learning for graduate students. Covers computational and statistical scaling of machine learning algorithms and tasks from both theoretical and practical perspectives. Content revised annually to encompass emerging machine learning approaches including generative models, transformers, and self-supervised learning. Approved as 800-level CISC elective in 2021 and 2022. Crosslisted with CISC in 2023. Enrollment: 13–28 students.

Instructor, Signals and Systems (ELEG 305) Spring semesters: 2020–2022, 2024, 2025
Undergraduate core requirement for Electrical Engineering, Computer Engineering, Cybersecurity Engineering, and GIScience and Environmental Data Analytics. Developed additional programming assignments. Performed ABET continual performance through documented initation, assessment of student outcomes, and self-evalation. Facilitated an Honors Add-on discussion section in 2021, 2024, and 2025. Enrollment: 60–82 students.

Co-Instructor, Computing & Data Sci. for Soft Materials Innovation & Discovery Spring 2023
(CHEG/ELEG/CISC/MSEG 867) Co-instructor for industry project centered course. Academic mentor for two computationally focused projects; lectures on machine learning for the industry-project focused course; and provided student feedback. Enrollment: 14 students.

Co-Instructor, Geospatial Data Science (GEOG/CISC/ELEG/SPAA 367) Spring 2023
Co-developed as a new, experimental interdisciplinary data science course. Covered geospatial data science and machine learning as one of the three modules. Enrollment: 19 students.

Coordinator, Signal Processing & Communications Seminar (ELEG 663) Spring 2022, 2023
Coordinated external speakers discussing research in machine learning, signal processing, brain-machine interfaces, and information theory.

Instructor, Independent Study (ELEG 466) Summer 2021
Collected material, weekly discussions, and projects focused on "Adaptive Filtering as an Introduction to Machine Learning". Enrollment: 3 students.

Guest lectures

EGGG 101:Introduction to Engineering (Interview on AI)	2025
CISC890: Computer Science: New Graduate Student)	2019–2025
KAAP 667: Responsible Conduct Research (Discussion on AI)	2024,2025
CHEG 867: Comp. & Data Sci. for Soft Materials Innov. & Discovery	2022,2024,2025
ELEG 305: Signals and Systems)	5/2019
CPEG 457/657: Search and Data Mining	4/2019
CISC 483/683: Introduction to Data Mining	3/2019

University of Manchester, Manchester, UK

Guest lectures, Text Mining (COMP 61332) Spring 2018

University of Liverpool, Liverpool, UK

Instructor Eng. Skills (ELEC 171/172) Matlab (5 weeks) Spring 2016, Fall 2016

Guest lecturer Neural Networks (ELEC 320) (8 weeks) Spring 2015

University of Florida, Gainesville, Florida, USA

Guest lecturer, Brain Machine Interfaces (EEL 6935) Fall 2011, Fall 2013

Teaching Assistant, Microprocessor Applications (EEL 4744) Fall 2009, Spring 2010

University of Nebraska-Lincoln (Omaha Campus), Omaha, Nebraska, USA

Undergraduate Teaching Assistant, Microprocessor System Design (CEEN 4330) Spring 2009

Undergraduate Teaching Assistant, Digital Design and Interfacing (CEEN 3110) Fall 2008

Ph.D. Dissertation Supervision (Committee Chair)

Bilal Riaz, Electrical and Computer Engineering — Fall 2025
"Applications of Computational Optimal Transport in Machine Learning and Signal Processing"

Hassan Baker, Electrical and Computer Engineering — Fall 2025
"Improving Learning under Data Scarcity Constraints: Application in Brain MRI and Natural Images"

Yalin Liao, Electrical and Computer Engineering — Spring 2025
"Statistical Divergences and Density Estimation for Anomaly Detection and Generative Modeling"

Yuksel Karahan, Electrical and Computer Engineering — Fall 2024
"Detecting distributional discrepancies using kernel landmarks"

Kristina M. Holton, Bioinformatics Data Science — Spring 2024
"Exploring early stage psychosis through multimodal approaches: a longitudinal study"

Carlos H. Mendoza-Cardenas, Electrical and Computer Engineering — Winter 2023
"Learning representative waveforms to analyze, summarize, and compare long-term neural recordings"

Master's Theses Supervision

Hau Van Phan, Electrical and Computer Engineering — M.S., Summer 2022
"Training a machine learning model for underwater chemical source localization in simulated turbulent flows"

Bilal Riaz, Electrical and Computer Engineering — M.S., Spring 2022
"On spectral clustering, informativeness and seriation"

C. Cesar Claros, Electrical and Computer Engineering — M.S., Summer 2020
"Synergistic human-machine prediction: Active error analysis and mitigation with Gaussian process regression"

Training in Pedagogy and Mentoring

- Culturally Aware Mentoring, Workshop and Introduction
  CIMER, University of Wisconsin-Madison and University of Delaware — 1/2021
- Inclusive Teaching Professional Development Workshop Series, University of Delaware
  College of Engineering Diversity Working Group — Spring/Fall 2019
- Course Design Institute, University of Delaware — 6/2019
- Associate Fellow of The Higher Education Academy — 3/2016
  awarded following "Teaching for Researchers" modules at University of Liverpool

Service

University Service
- Co-Lead, Research Working Group, First State AI Institute — 9/2025
- Reviewer, Intramural Seed Grant Program — 2024
- Reviewer, Pilot Project, UD Institute for Engineering Driven Health — 2024,2025
- Neuroscience Planning Committee (Chairs: John Jeka/Anna Klintsova) — 8/2019–3/2021

Data Science Institute Service
- Masters of Science in Data Science (academic advisor) — 1/2020–present
- Breakout session host, "Foundational AI" — 4/7/2025
  Data Science and DARWIN Symposium
- Faculty Advisor, Data Science Community Hour — 1/2021–5/2021
- Session Chair, "DARWIN for Physics, Engineering, and Computer Science" — 2/12/2021
  DARWIN Computing Symposium
- DSI Representative, Technology & Data Analytics Career Meetup — 3/4/2020
- Member, Data Science Symposium Planning Committee — 4/2019–11/2019
  (Chairs: Greg Dobler & Zachary Collier)
- Mastering Data Science and Statistical Analysis Information Session — 2× in 2019

College of Engineering Service
- Jr. Faculty Advisory Council — Spring 2024
- Presenter, COE NSF GRFP Workshop — 9/2/2021, 8/29/2022, 8/30/2023
- AI Symposium Committee — 6/29/2023–9/26/2023
- Exploring Intellectual Neighborhoods — 7/12/2023
- Mentor, COE NSF GRFP Coaching Progam — 2021

ECE Department Service
- Undergraduate Comittee (Chair: Fouad Kiamilev) — 2025–present
- Chair, ECE AI Engineering BS Program Ad-hoc Committee — 2024–present
- Representative, Blue & Golden Saturdays — 3× 2019, 2× 2020, 2× 2021, 2× 2025
- Representative, COE Open House — 2025
- Faculty Search Committee, Artificial Intelligence (Chair: Fouad Kiamilev) — 2024–2025
- Presenter, Wednesday Tech Forum — 1× 2025
- Secondary Appointments Committee (Chair: Keith Goossen) — 2023–2025
- Representative, Delaware Decision Days — 2× 2019, 3× 2021, 1× 2025
- Faculty Search Committee, AI for Communications/Cybersecurity — 2023–2024
  (Chair: Javier Garcia-Frias)
- Coordinator, ECE Seminar Series — Fall 2020, Spring 2022, Spring 2023
- UD IEEE Student Chapter Branch Counselor — 5/2019–8/2022
- Member, ECE Activities Committee (Chair: Vishal Saxena) — 9/2021–5/2022
- Representative, Department of Energy Virtual Recruiting Event — 2022
- Member, ECE Strategic Planning Committee (Chair: Jamie Phillips) — 9/2020–5/2021
- Member, ECE Areas Ad-hoc Committee (Chair: Kenneth Barner) — Fall 2019
- Representative, Alumni Weekend: "Mastering Makerspaces!" — June 2019

CIS Department Service
- CIS Representative, Executive Committee, MSDS Program — 9/2021–5/2022
- Faculty Search Committee, Computer & Information Sciences — 2019–2020
  (Chair: Chien-Chung Shen; search resulted in 3 tenure-track faculty hires.)

Ph.D. Dissertation Committee Membership at UD:

33. Daniela Martin, Computer and Infomation Sciences — Ph.D. proposal, 12/2025
32. Stephen Kronenberger, Chemical and Biomolecular Engineering — Ph.D. committee meeting, 12/2025
31. Mohammad Baksh, Electrical and Computer Engineering — Ph.D. proposal, 12/2025
30. Sayeh Rezaee, Electrical and Computer Engineering — Ph.D. proposal, 8/2025
29. Lars Folkerts, Electrical and Computer Engineering — Ph.D. defense, 12/2025
28. Abdullah Alrushud, Electrical and Computer Engineering — Ph.D. proposal, 5/2025
27. Jesus Orozco, Mechanical Engineering — Ph.D. proposal, 5/2025
26. Abdalrahman Hmod Alblwi, Electrical and Computer Engineering — Ph.D. defense, 4/2025
25. Ke Ma, Materials Science and Engineering — Ph.D. defense, 10/2025

24. Rachel Viger, Electrical and Computer Engineering — Ph.D. defense, 3/2025
23. Ashuta Bhattarai, Computer and Information Sciences — Ph.D. defense, 2/2025
22. Vishruta Yawatkar, Bioinformatics Data Science — Ph.D. proposal, 2/2025
21. Yue Zhang, Electrical and Computer Engineering — Ph.D. defense, 10/2025
20. Olamide "Lamal" Ayodele, Financial Services Analytics — Ph.D. proposal, 12/2024
19. Ghazaleh Zehtab, Financial Services Analytics — Ph.D. proposal, 12/2024
18. Samet Bayram, Electrical and Computer Engineering — Ph.D. proposal, 12/2024
17. Kyle Regan, Bioinformatics Data Science — Ph.D. proposal, 9/2024
16. Raphael Poulain, Computer and Information Sciences — Ph.D. defense, 9/2024
15. Cameron Ibrahim, Computer and Information Sciences — Ph.D. proposal, 9/2024
14. Zahra Vahdat, Electrical and Computer Engineering — Ph.D. defense, 5/2024
13. Shizhao Lu, Chemical and Biomolecular Engineering — Ph.D. defense, 2/2024
12. Pasquale Zingo, Electrical and Computer Engineering — Ph.D. defense, 2/2024
11. Seyedalireza Khoshsirat, Computer and Information Sciences — Ph.D. proposal, 1/2024
10. Mehak Gupta, Computer and Information Sciences — Ph.D. defense, 5/2023
9. Karelia Pena Pena, Electrical and Computer Engineering — Ph.D. defense, 1/2023
8. Fanruo Meng, Electrical and Computer Engineering — Ph.D. defense, 1/2023
7. Xinjie "Ethan" Lan, Electrical and Computer Engineering — Ph.D. defense, 4/2022
6. Sergio Sepúlveda, Electrical and Computer Engineering — Ph.D. defense, 4/2022
5. Zhenzhu Zheng, Computer and Information Sciences — Ph.D. proposal, 11/2020
4. Kevin Corder, Computer and Information Sciences — Ph.D. defense, 9/2025
3. Kuang Lu, Electrical and Computer Engineering — Ph.D. defense, 11/2020
2. Michael J. De Lucia, Electrical and Computer Engineering — Ph.D. defense, 3/2020
1. Alejandro Parada-Mayorga, Electrical and Computer Engineering — Ph.D. defense, 7/2019

M.S. Theses, Committee Membership at UD:

3. Joseph Cristiano, Bioinformatics Data Science — M.S. defense, 7/2025
2. Yashwanth Tekumudi, Master of Science in Robotics — M.S. defense, 4/2024
1. Camryn Scully, Master of Science in Robotics — M.S. defense, 4/2024

Senior Theses, Honors Degree, Committee Membership at UD:

2. Kristina Holsapple, Computer and Information Sciences — 5/2023
1. Rebecca Clements, Biomedical Engineering — 5/2021

Thesis/Ph.D.Committee Membership (External)

Daniel Guillermo García Murillo, Automatic Engineering (Ingeniería Automática)
Universidad Nacional de Colombia, Manizales, Colombia — D. Eng. defense, 9/2024

Professional Involvement
- IEEE (Institute for Electrical and Electronics Engineers) — 2006–Present
  - —Senior Member — 5/2025–Present
  - —Delaware Bay Section, Student Activities Committee — 5/2019–2024
  - —University of Delaware Student Branch Counselor — 5/2019–8/2022
  - —Signal Processing Society — 2013–Present
  - —Engineering in Medicine and Biology Society (EMBS) — 2010–Present

Academic Service (Reviewer)

– NSF Reviewer 2021, 2022

Journals:

– *Transactions on Machine Learning Research* (TMLR) 2022–2025
– *IEEE Transactions on Neural Networks and Learning Systems* 2015–2024
– *Neuroinformatics* 2025
– *IEEE Transactions on Artificial Intelligence* 2023
– *Proceedings of the National Academy of Sciences* (PNAS) 2023
– *IEEE Signal Processing Letters* 2022
– *IEEE Transactions on Automatic Control* 2021
– *IEEE Transactions on Knowledge Data Engineering* 2017–2020
– *IEEE Transactions on Signal Processing* 2019, 2020
– *IEEE Access* 2019
– *IEEE Transactions on Biomedical Engineering* 2014, 2018

Conferences:

– *NeurIPS* 2018–2025
– *WACV* 2025,2026
– *ICML* 2019,2021–2025
– *ICLR* 2021–2026
– *ICASSP* 2009,2018–2026
– *CVPR* 2024–2025
– *AAAI* 2018,2020–2022,2025,2026
– *AISTATS* 2025,2026
– *IJCNN* 2025
– *MLSP* 2018–2025
– *IEEE EMBS NER* 2013,2017,2019,2021,2023
– *EMNLP* 2018

Workshops:

– *ML4H 2025 Symposium* 2025
– *NeurIPS Workshop on Times Series for Health (TS4H)* 2025
– *NeurIPS Workshop on Distribution Shifts (DistShift)* 2022,2023

Outreach Activities

– Presenter, Newark Charter School (Engineering Pathway at High School) 10/17/2025
– Guest Speaker, "Looking under the hood at the AI engine" 9/9/2024
  Jenner's Pond Retirement Community
– Mentor, Brain+AI Weekly Research Discussions (3 11th-grade students) Summer 2024
– Exhibitor, "STEAM Day at UD" (7th & 8th graders), Project Brain Light 4/9/2024
– Instructor, "STEAM Day at Thomas Edison Charter School" (K–7th grades) 7/7/2023
– Presenter, "45th Annual STEM Conference" (6–12th graders) 4/5/2023
  Delaware Technical Student Association
– Exhibitor, "STEAM Day at UD" (7th graders), Project Brain Light 4/4/2023
– Module Preparation, "Read Someone's Mind" ($9-10^{\text{th}}$ graders), UD ECE 6/24/2022
– Exhibitor, "STEAM Day at UD" (7th graders), Project Brain Light 6/7/2022
– Project Judge, "UD GSG Hackathon on Misinformation and Cybersecurity" 4/25/2021
– Presenter, "Engineering Your Tomorrow", Sussex County (DE) STEM Alliance 2/2020
– Presenter, "Measuring Electric Waves in the Brain", Serviam Girls Academy 5/2019
– Project Judge, FIRST LEGO League SE Pennsylvania Regional Championship 12/2019
– Volunteer, Engineering Discovery Day, University of Delaware, AΩE 10/2018