Yalda Shahriari, Ph.D.

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1. ACADEMIC APPOINTMENTS

University of Rhode Island — **Kingston, RI**
Associate Professor of Biomedical Engineering — July 2022 - Present

University of Rhode Island (URI) — **Kingston, RI**
Assistant Professor of Biomedical Engineering, — Aug 2016 – June 2022
Director of Neural Processing and Control Lab (NeuralPC Lab)

University of California at San Francisco (USCF) — **San Francisco, CA**
Postdoctoral Researcher — June 2015 – Aug 2016

2. EDUCATION

Old Dominion University of Virginia — **Norfolk, VA**
Ph.D. Biomedical Engineering — Aug 2012 – May 2015

Iran University of Science and Technology — **Tehran, Iran**
M.Sc. Biomedical Engineering — Oct 2008 – Oct 2011

Ferdowsi University of Mashad — **Mashad, Iran**
B.Sc. Electrical Engineering — Oct 2003 – Sep 2008

3. FUNDING ACTIVITIES

Highlights: Recipient of $2,486,988 funds, including four active and one completed NSF awards as PI, two NSF awards as Co-PI, and one internal grant since joined URI.

External Funding:

- [**Funded**] Principal Investigator, *"Integrated Framework for Recording and Decoding Multimodal Neural Associations of Visual Hallucinations and Motor Functions in Parkinson's Disease",* National Science Foundation; $463,693; Sept 2024-Aug 2027, Effort 100%.
- [**Funded**] Principal Investigator, *"Collaborative Research: HCC: Small: Graph-Centric Exploration of Nonlinear Neural Dynamics in Visuospatial-Motor Functions during*

Immersive Human-Computer Interactions", National Science Foundation; $349,972; Oct 2024-Sept 2027, Effort 100%.

- [**Funded**] Principal Investigator, *"NCS-FO: SOUND: Understanding the Functional Neural Dynamics Underpinning Auditory Processing Dysfunctions through a Multiscale Recording-Stimulation Framework",* National Science Foundation; $609,602; Oct 2020-Mar 2025, Effort 100%.
- [**Funded**] Principal Investigator, *"CHS: Small: A Graph-Based Data Fusion Framework Towards Guiding A Hybrid Brain-Computer Interface",* National Science Foundation; $309,846; Oct 2020-Jan 2025, Effort 100%.
- [**Funded**] Principal Investigator, *"A Hybrid Brain-Computer Interface for Long-Term Use by Persons with Severe Motor Deficit: Towards Development of Personalized Algorithms*", National Science Foundation; $303,875; Aug 2019-July 2022, Effort 100%.
- [**Funded**] Co-Principal Investigator (PI: Kunal Mankodiya), *"EAGER: Towards a multimodal smart textile medical monitoring system for Neonatal ICUs"*, National Science Foundation; $331,998 (my portion $90,000); Oct 2021-Sept 2024, Effort 30%.
- [**Funded**] Co-Principal Investigator (PI: Reza Abiri), "An Adaptive Closed-Loop Robotic Exoskeleton for Upper Extremity Motor Rehabilitation***",*** National Science Foundation; $460,000 (my portion $160,000); Sept 2023-Aug 2026, Effort 25%.

Internal Funding:

- [**Funded**] Principal Investigator, *"Characterization of Brain Activity in Patients with Amyotrophic Lateral Sclerosis",* Rhode Island IDeA Network for Excellence in Biomedical Research; $200,000; May 2017-April 2019, Effort 100%.

4. PUBLICATIONS

4.1 BOOK CHAPTER

Y. Shahriari*. W. Besio, S. I. Hosni, A. Zisk, S. B. Borgheai, R. J. Deligani, J. Mclinden. Electroencephalography. Springer Nature Book of Neural Interface Engineering: Linking the Physical World and the Nervous System; 2019 (***correspondence author**).

4.2 REFEREED JOURNALS

PUBLISHED

25. **P. Pandey**, J. McLinden, N. Rahimi, C. Kumar, M. Shao, S. Ostadabbas, K.M. Spencer, **Y. Shahriari***. fNIRSNET: A Multi-view Spatio-Temporal Convolutional Neural Network Fusion for fNIRS-based Auditory Event Classification. Engineering Applications of Artificial Intelligence (*correspondence author). [**IF: 7.5**]

24. N. Rahimi, C. Kumar, J. McLinden, S. Hosni, B. Borgheai, **Y. Shahriari**, M. Shao. Topology-aware Multimodal Fusion for Neural Dynamics Representation Learning and Classification. IEEE Sensors, 2024; 24(13), 21062-21073. **[IF: 4.3]**

23. **B. Borgheai**, A. H. Zisk, J. McLinden,**Y. Shahriari***. Multimodal Pre-screening Can Predict BCI Performance Variability: A Novel Subject-specific Experimental Scheme. Computers in biology and Medicine Journal, 2024; 168:107658 (15 pp) (*correspondence author). **[IF: 7.0]**

22. **J. McLinden**, N. Rahimi, C. Kumar, D.J. Krusienski, M. Shao, K. M. Spencer, **Y. Shahriari***. Investigation of electro-vascular phase-amplitude coupling during an auditory task. Computers in biology and Medicine Journal, 2024; 169:107902 (10 pp) (*correspondence author). **[IF: 7.0]**

21. **J. McLinden,** B. Borgheai, S. Hosni, C. Kumar, N. Rahimi, M. Shao, K. M. Spencer, **Y. Shahriari*.** Individual-Specific Characterization of Event-Related Hemodynamic Responses during an Auditory Task: An Exploratory Study. Journal of Behavioral Brain Research, 2023; 436:114074 (9 pp) (*correspondence author). **[IF: 2.6]**

20. S. Zhu, S. I. Hosni S. I, X. Huang, M. Wan, S. B. Borgheai, J. McLinden, **Y. Shahriari**, S. Ostadabbas. A dynamical graph-based feature extraction approach to enhance mental task classification in brain–computer interfaces. Computers in Biology and Medicine. 2023 1;153:106498 (9 pp). **[IF: 7.0]**

19. **S. I. Hosni,** B. Borgheai, J. McLinden, S. Zhu, X. Huang, S. Ostadabbas, **Y. Shahriari*.** A Graph-Based Nonlinear Dynamic Characterization of Motor Imagery Toward an Enhanced Hybrid BCI. Neuroinformatics Journal, 2022; 4:1169-89 (21 pp) (*correspondence author). **[IF: 2.7]**

18. G**.** Cay, V. Ravichandran, M.J. Saikia, L. Hoffman, A. Laptook, J. Padbury, A.L. Salisbury, A. Gitelson-Kahn, K. Venkatasubramanian, **Y. Shahriari**, and K. Mankodiya, 2022. An e-textile respiration sensing system for NICU monitoring: design and validation. Journal of Signal Processing Systems, pp.1-15. **[IF: 1.6]**

17. **A. H. Zisk,** B. Borgheai, J. McLinden, R. Jafari, **Y. Shahriari*.** Improving longitudinal P300-BCI performance for people with ALS using a data augmentation and jitter correction approach. Brain-Computer Interfaces Journal, 2022; (18 pp) (*correspondence author).

16. **R. J. Deligani,** B. Borgheai, J. McLinden, **Y. Shahriari***. Multimodal fusion of EEG-fNIRS: A mutual information-based hybrid classification framework. Journal of Biomedical Optics Express, 2021; 12(3) (16 pp) (*correspondence author). **[IF: 3.73]**

15. **J. McLinden**, R. J. Deligani, M. R. Abtahi, U. Akbar, K. Mankodiya, **Y. Shahriari***. Disruptions of Cortico-Kinematic Interactions in Parkinson's Disease. Journal of Behavioral Brain Research, 2021; 404:113153 (9 pp) (*correspondence author). **[IF: 2.6]** (*correspondence author).

14. **B. Borgheai,** J. McLinden, K. Mankodiya, **Y. Shahriari*.** Frontal Functional Network Disruptions Associated with Amyotrophic Lateral Sclerosis: An fNIRS-based Minimum Spanning Tree Analysis. Frontiers in neuroscience, 2020; 14:1376 (17 pp) (*correspondence author)**. [IF: 3.2]**

13. **S. M. Hosni**, S. B. Borgheai, J. McLinden, **Y. Shahriari***. An fNIRS-Based Motor Imagery BCI for ALS: A Subject-Specific Data-Driven Approach. IEEE Transactions on Neural Systems and Rehabilitation Engineering, 2020, 8(12): 3063-3073 (*correspo ndence author). **[IF: 4.8]**

12. **A. H. Zisk,** S. B. Borgheai, J. McLinden, S. I. Hosni, R. J. Deligani, **Y. Shahriari*.** Latency Jitter and its Correlates in People with Amyotrophic Lateral Sclerosis. Clinical Neurophysiology Journal, 2020, 132(2) (11 pp) (*correspondence author). **[IF: 3.7]**

11. **R. J. Deligani**, S. I. Hosni, S. B. Borgheai, J. McLinden, A. H. Zisk, K. Mankodiya, **Y. Shahriari***. Electrical and Hemodynamic Neural Functions in People with ALS: An EEG-fNIRS Resting-State Study. IEEE Transactions on Neural Systems and Rehabilitation Engineering, 2020, 28(12) (11 pp) (*correspondence author). **[IF: 4.8]**

10. **S. B. Borgheai**, S. I. Hosni, R. J. Deligani, A. Zisk, J. McLinden, M. Abtahi, K. Mankodiya, **Y. Shahriari***. Enhancing Communication for People in Late-Stage ALS Using an fNIRS-Based BCI System. IEEE Transactions on Neural Systems and Rehabilitation Engineering; 2020; 28(5) (10 pp) (*correspondence author). **[IF: 4.8]**

9. M. Abtahi, S. B. Borgheai, R. J. Deligani, N. Constant, R. Diouf, **Y. Shahriari**, K. Mankodiya. Merging fNIRS-EEG Brain Monitoring and Body Motion Capture to Distinguish Parkinson's Disease. IEEE Transactions on Neural Systems and Rehabilitation Engineering; 2020; doi: 10.1109/TNSRE.2020.2987888 (9 pp). **[IF: 4.8]**

8. **B. Borgheai**, **R. J. Deligani**, J. McLinden, A. Zisk, S. I. Hosni, M. Abtahi, K. Mankodiya, **Y. Shahriari***. Multimodal Exploration of Non-motor Neural Functions in ALS Patients Using Simultaneous EEG-fNIRS Recording. Journal of Neural Engineering; 2019; 16:066036 (15 pp) (co-first authors, *correspondence author). **[IF: 3.7]**

7. **S. I. Hosni**, R. J. Deligani, A. Zisk, J. McLinden, S. B. Borgheai, **Y. Shahriari***. An Exploration of Neural Dynamics of Motor Imagery for People with Amyotrophic Lateral Sclerosis. Journal of Neural Engineering; 2019; 17:016005 (15 pp) (*correspondence author). **[IF: 3.7]**

6. **Y. Shahriari,** T. M. Vaughan, L. M. McCane, B. Z. Allison, J. R. Wolpaw, D. J. Krusienski. An Exploration of BCI Performance Variations in People with Amyotrophic Lateral Sclerosis using Longitudinal EEG Data. Journal of Neural Engineering, 2019; 16: 056031 (9 pp). **[IF: 3.7]**

5. M. Malekmohammadi*, **Y. Shahriari***, N. AuYong, A. O'Keeffe, Y. Bordelon, X. Hu, N. Pouratian. Pallidal stimulation in Parkinson disease differentially modulates local and network β activity. Journal of Neural Engineering, 2018; 15(5): 056016 (12 pp) (***co-first authors**). **[IF: 3.7]**

4. **Y. Shahriari**, R. Fidler, M. M. Pelter, Y. Bai, A. Villaroman, X. Hu. Electrocardiogram Signal Quality Assessment Based on Structural Image Similarity Metric. IEEE Transactions on Biomedical Engineering, 2017; 65(4): 745-753. **[IF: 4.4]**

3. Bai, D. Do, Q. Ding, J. A. Palacios, **Y. Shahriari**, M. M. Pelter, N. Boyle, R. Fidler, X. Hu. Is the Sequence of SuperAlarm Triggers More Predictive Than Sequence of the Currently Utilized Patient Monitor Alarms? IEEE Transactions on Biomedical Engineering, 2016; 64(5):1023-1032. **[IF: 4.4]**

2. **Y. Shahriari,** D. J. Krusienski, Y. S. Dadi, M. Seo, H. S. Shin, J. H. Choi. Impaired Auditory Evoked Potentials and Oscillations in Frontal and Auditory Cortex of A Schizophrenia Mouse Model. The World Journal of Biological Psychiatry, 2016; 17(6): 439-448. **[IF: 3.3]**

1. **Y. Shahriari**, A. Erfanian. Improving the Performance of P300-based Brain-Computer Interface Through Subspace-based Filtering. Neurocomputing journal, 2013; 121:434-441. **[IF: 5.5]**

+ UNDER PREPARATION

1. J. McLinden, P. Pandey, S. I. Hosni, M. Shao, N. Rahimi, K.M. Spencer, **Y. Shahriari*.** EEG-fNIRS Causal Interactions during Auditory Processing. To be submitted to the Journal of Neural Engineering.

4.3 CONFERENCES

PUBLISHED/ACCEPTED

37. M. Norouzi, M. Z. Amirani, **Y. Shahriari**, and R. Abiri, "Precision Enhancement in Sustained Visual Attention Training Platforms: Offline EEG Signal Analysis for Classifier Fine-Tuning," IEEE EMBC conference, 2024.
36. Cetera, A. Rabiee, S. Ghafoori, **Y. Shahriari**, and R. Abiri, "Classification of Emerging Neural Activity from Planning to Grasp Execution using a Novel EEG-Based BCI Platform," IEEE EMBC conference, 2024.
35. S. Ghafoori, A. Rabiee, A. Cetera, **Y. Shahriari**, and R. Abiri, "Bispectrum Analysis of Noninvasive EEG Signals Discriminates Complex and Natural Grasp Types," IEEE EMBC conference, 2024.
34. A. Rabiee, S. Ghafoori, A. Cetera, **Y. Shahriari**, and R. Abiri, "Wavelet Analysis of Noninvasive EEG Signals Discriminates Complex and Natural Grasp Types," IEEE EMBC conference, 2024.
33. **J. McLinden**, P. Pandey, A. Cerullo1, M. van ’t Wout-Frank, K.M. Spencer, **Y. Shahriari**. EEG-fNIRS Causal Interactions during Auditory Processing. 2nd Neuroscience of the Everyday World Conference, 2024.
32. **J. McLinden**, P. Pandey, A. Cerullo, N. Rahimi, C. Kumar, M. Shao, K.M. Spencer, M. van ‘t Wout-Frank, **Y. Shahriari**. Causal interactions between electro-cortical oscillations and hemodynamics during an auditory task. 5th International Neuroergonomics Conference, 2024.
31. **J. McLinden**, D.E. Gemoets, D. Hahn, J. Brangaccio, **Y. Shahriari**, J.R. Wolpaw, J.J.S. Norton. Automating feedback in H-reflex operant conditioning studies: Feasibility and first steps. 11th International IEEE EMBS Conference on Neural Engineering, 2023.
30. **J. McLinden**, S.B. Borgheai, C. Kumar, N. Rahimi, M. Shao, K.M. Spencer, **Y. Shahriari**. Phase-amplitude coupling between EEG cortical oscillations and respiration: An exploratory study. 11th International IEEE EMBS Conference on Neural Engineering, 2023.
29. **J. McLinden**, C. Kumar, N. Rahimi, M. Shao, K.M. Spencer, **Y. Shahriari**. Electrovascular phase-amplitude coupling during an auditory task. 10th International Brain-Computer Interface Meeting, 2023.
28. **S.I. Hosni**, J. McLinden, S.B. Borgheai, S. Zhu, S. Ostadabbas, **Y. Shahriari**. Graph-based modeling of EEG: insights on neural data analytics for BCI applications.10th International Brain-Computer Interface Meeting, 2023.

27. C. Kumar, J.P. Donohue, R. Gonjari, N. Rahimi, J. McLinden, **Y. Shahriari**, M. Shao. Adversary on Multimodal BCI-based Classification. 11th International IEEE EMBS Conference on Neural Engineering, 2023.

26. **J. McIntyre**, J. McLinden, S.B. Borgheai, **Y. Shahriari**. Exploratory fNIRS Assessment of Cortical Activation during a Novel Virtual Reality Object Orientation Memory Task. 11th International IEEE EMBS Conference on Neural Engineering, 2023.

25. **B. Borgheai**, A. Zisk, J. McLinden, J. Mcintyre, **Y. Shahriari**. Identifying Cognitive Factors Contributing to BCI Performance Variability: A multimodal Study. Society for Neuroscience, 2022.

24. **S. I Hosni**, J. McLinden, S. B. Borgheai, S. Zhu, S. Ostadabbas, **Y. Shahriari,** Graph-based Recurrence Quantification Analysis of EEG Spectral Dynamics for Motor Imagery-based BCIs. 43rd Annual International Conference of the IEEE/EMBC Conference, 2021.

23. S. Zhu, S., S. I Hosni, J. McLinden, S. B. Borgheai, **Y. Shahriari,** S. Ostadabbas. A Graph-based Feature Extraction Algorithm Towards a Robust Data Fusion Framework for Brain-Computer Interfaces. 43rd Annual International Conference of the IEEE/EMBC Conference, 2021.

22. **S. I Hosni**, S. B. Borgheai, J. McLinden, S. Zhu, S. Ostadabbas, **Y. Shahriari**. A Graph-based dynamical characterization and inference in hybrid BCIs. Asilomar Conference on Signals, Systems, and Computers, 2021.

21. **S. B. Borgheai,** R. J. Deligani, J. McLindean, M. Abtahi, S. Ostadabbas, K. Mankodiya, **Y. Shahriari**. Multimodal Evaluation of Mental Workload Using a Hybrid EEG-fNIRS Brain-Computer Interface System. 9th International IEEE/EMBS Conference on Neural Engineering, 2019; 973-976.

20. **R. J. Deligani,** S. Ismail Hosni, T. M. Vaughan, L. M. McCane, D. J. Zeitlin, D. J. McFarland, D. J. Krusienski, **Y. Shahriari**. Neural Alterations during Use of a P300-based BCI by Individuals with Amyotrophic Lateral Sclerosis. 9th International IEEE/EMBS Conference on Neural Engineering, 2019; 899-902.

19. **S. B. Borgheai,** M. Abtahi, J. McLindean, K. Mankodiya, **Y. Shahriari**. Towards a Single Trial fNIRS-based Brain-Computer Interface for Communication. 9th International IEEE/EMBS Conference on Neural Engineering, 2019; 1030-1033.

18. **R. J. Deligani,** C. S. Carmack, S.M. Heckman, L. M. McCane, D. J. McFarland, T. M. Vaughan, J. R. Wolpaw, D. J. Zeitlin, D. J. Krusienski, **Y. Shahriari**. Alterations in Connectivity During Use of a P300-based BCI by Individuals With Amyotrophic Lateral Sclerosis. 7th Brain-Computer Interface Meeting, 2018.

17. M. Abtahi, **Y. Shahriari**, M. J. Saikia, G. Cay, U. Akbar, K. Mankodiya. EEG-fNIRS Combined Neuroimaging Study on PD Patients Performing UPDRS Motor Tasks. Neurology 92, P5. 8-020.

16. N. Constant, U. Akbar, M. Abtahi, J. Gillinsky, **Y. Shahriari**, K. Mankodiya. E-textile Glove Monitoring Finger and Hand Motion. 16th International Conference on Wearable and Implantable Body Sensor Networks (BSN), 2019.

15. **S. B. Borgheai,** M. Abtahi, K. Mankodiya**, Y. Shahriari.** Towards a Single Trial fNIRS-based Brain-Computer Interface for Communication. 7th Brain-Computer Interface Meeting, 2018.

14. **S. I. Hosni,** W. Besio, **Y. Shahriari**. A Comparison Between Spatial Filtering Techniques Based on Conventional Methods and Tripolar Concentric Ring Electrodes. 7th Brain-Computer Interface Meeting, 2018.

13. **Y. Shahriari**, M. Malekmohammadi, A. O'Keeffe, X. Hu, N. Pouratian. Beta Oscillations during Pallidal Deep Brain Stimulation in Parkinson's Disease. Congress of Neurological Surgeons, 2017.

12. **Y. Shahriari**, M. Malekmohammadi, A. O'Keeffe, X. Hu, N. Pouratian. Global and Local Oscillatory Changes Associated with Pallidal Deep Brain Stimulation in Parkinson Disease. Society for Neuroscience, 2017.

11. S. M. Heckman, **Y. Shahriari,** T. M. Vaughan, D. M. Zeitlin, L. M. McCane, C. S. Carmack, J. R. Wolpaw, B. Z. Allison, D.J. Krusienski. Longitudinal EEG Correlates of BCI Performance Variations in People with Amyotrophic Lateral Sclerosis. Society for Neuroscience, 2017.

10. N. Pouratian, M. Malekmohammadi, **Y. Shahriari,** N. A. Young, X. Hu. Motor cortex pllidocortical desynchronization as therapeutic mechanisms of pallidal deep brain stimulation. The American Academy of Neurological Surgery, 2017.

9. **Y. Shahriari**, A. O'Keeffe, M. Malekmohammadi, X. Hu, N. Pouratian. The Effect of Deep Brain Stimulation on Pallido-Cortical Coherency Pattern of Parkinson's Disease. 6th Brain-Computer Interface Meeting, 2016.

8. **Y. Shahriari,** D. J. Krusienski, J. H. Choi. Frontal-Temporal Connectivity Dysfunction in a Mouse Model of Schizophrenia. 6th Brain-Computer Interface Meeting, 2016.

7. **Y. Shahriari**, Q. Ding, R. Fidler, et al. Perceptual Image Processing Based ECG Quality Assessment. Journal of Electrocardiology, 2016; 49(6):937.

6. **Y. Shahriari Y**, Q. Ding, R. Fidler, et al. 129: Poor ECG Signal Quality Associated with False Arrhythmia Alarms. Critical Care Medicine, 2015; 43(12):33-34.

5. **Y. Shahriari**, E. W. Sellers, L. M. McCane, T. M. Vaughan, D. J. Krusienski. Directional brain functional interaction analysis in patients with amyotrophic lateral sclerosis. 7th International IEEE/EMBS Conference on Neural Engineering, 2015; DOI: 10.1109/NER, 2015.7146788.

4. **Y. Shahriari**, S. Macdonald, Y. Surekha, J. H. Choi, D. J. Krusienski. Using Auditory Steady State Responses to Characterize Neural Connectivity in Mice Models of Schizophrenia. Society for Neuroscience, 2014

3. **Y. Shahriari,** T. M. Vaughan, D. E. Corda, D. Zeltin, J. R. Wolpaw, D. J. Krusienski. EEG Correlates of Performance During Long-Term Use of a P300 BCI by Individuals with Amyotrophic Lateral Sclerosis. Proceedings of 5th Brain-Computer Interface Meeting: Define the Future, 2013.

2. **Y. Shahriari,** A. Erfanian. A mutual information based channel selection scheme for P300-based brain-computer interface. In Neural Engineering (NER), 2011 5th International IEEE/EMBS Conference, 2011.

1. **Y. Shahriari,** A. Erfanian. An Improved P300 Based Brain-Computer Interface: Feature Selection Based Mutual Information. 18th International Conference on Biomedical Engineering, ICBME, 2011.

5. TEACHING

5.1 COURSE TAUGHT

University of Rhode Island

- Instructor: BME 181, **Biomedical Engineering Seminar I**, 1 credit (SP24)
- Instructor: BME 473/ELE 573, **Brain Signal Processing and Applications**, 4 credit (FA23).
- Instructor: BME 485, **Biomedical Engineering Capstone Design II**, 2 credit (SP23).
- Instructor: BME 484, **Biomedical Engineering Capstone Design I**, 3 credit (FA22).
- Instructor: BME 485, **Biomedical Engineering Capstone Design II**, 2 credit (SP22).
- Instructor: BME 484, **Biomedical Engineering Capstone Design I**, 3 credit (FA21).
- Instructor: BME 281, **Biomedical Engineering Seminar II**, 1 credit (FA21).
- Instructor: BME 485, **Biomedical Engineering Capstone Design II**, 2 credit (SP21).
- Instructor: BME 181, **Biomedical Engineering Seminar I**, 1 credit (SP21).
- Instructor: BME 484, **Biomedical Engineering Capstone Design I**, 3 credit (FA20).
- Instructor: BME 181, **Biomedical Engineering Seminar I**, 1 credit (SP20).
- Instructor: ELE 594, **Brain Signal Processing and Applications**, 3 credits (FA19).
- Instructor: BME 181, **Biomedical Engineering Seminar I**, 1 credit (SP19).
- Instructor: ELE 594, **Brain-Computer Interfaces**, 3 credits, (FA18).
- Instructor: BME 181, **Biomedical Engineering Seminar I**, 1 credit (SP18).
- Instructor: ELE 594, **Brain-Computer Interfaces**, 3 credits, (FA17).
- Instructor: BME 181, **Biomedical Engineering Seminar I**, 1 credit.
- Instructor: BME 461/ELE 561 level, **Physiological modeling and control**, 3 credits (FA16).

5.2 OTHER TEACHING

- Guest Lecturer: BME 468/ELE 568, “fNIRS Fundamentals & its Mergers”, URI (SP24).
- Guest Lecturer: “Fundamentals of fNIRS and it Application in Neurotechnology”, BCI & Neurotechnology Masterclasses in RI and MA (SU22).
- Guest Lecturer: BME 468/ELE 568, “Fundamentals of fNIRS and it Application in Neurotechnology”, URI (SP22).
- Guest Lecturer: Focus summer course at National Center for Adaptive Neuroethologies (NCAN), “Fundamentals of fNIRS and its Applications in Neurotechnology”, (SU21).
- Mentor: Neuromatch Academy, (SU20).
- Guest Lecturer: BME 468/ELE 568, “Characterization of Invasive and Non-Invasive Neural Responses in Patients with Neurological Impairments”, URI (SP20).
- Guest Lecturer: BME 468/ELE 568, “Characterization of Invasive and Non-Invasive Neural Responses in Patients with Neurological Impairments”, URI (SP19).
- Guest Lecturer: BME 468/ELE 568, “Brain-Computer Interface for Assistive Technology”, URI (SP17).
- Guest Lecturer: BME 468/ELE 568, “Characterization of Brain Activity in Patients with Neurological Impairment”, URI (SP17).
- Experimental Learning Project: Interdisciplinary collaborative projects with Electro Standard Laboratories (ESL) Company, “Developing Closed Loop Robotic Hand for the amputees”, URI (SU17-).

- Guest Lecturer: BME 402/502, “Basics of Signals I”, ODU (SP15).
- Guest Lecturer: BME 402/502, “Basics of Signals II”, ODU (SP15).
- Guest Lecturer: BME 402/502, “Brain-Computer Interface”, ODU (SP15).

6. INVITED LECTURES AND SEMINARS

- **NIRx Webinar,** *“Modality Fusion: EEG-fNIRS Convergence for a Deeper Dive into Auditory Processing”,* March 2024.
- **Multimodal Neuroimaging Workshop at the 10th International Brain-Computer Interface Meeting,** *“fNIRS Fundamentals & its Mergers with EEG”,* June 2024.
- **International Conference on Systems, Man, and Cybernetics**, “*Fundamentals of fNIRS and it Application in Neurotechnology*”, Oct 2022.
- **2021 IEEE Asilomar Conference on Signals, Systems, and Computers**, “*A Graph-based Dynamical Characterization and Inference in Hybrid BCIs”,* Oct, 2021.
- **47th Annual Northeastern Conference**, “*An fNIRS-based Minimum Spanning Tree Approach to Analyze Brain Functional Network Dynamics*”, March, 2021.
- **The University of Southern California**, “*Invasive and Non-invasive Brain-Computer Interfaces*”, Oct, 2019.
- **University of Rhode Island,** Electrical, Computer, & Biomedical Engineering Graduate Seminar, “Multimodal Characterization of Brain Activity,” Nov, 2018.
- **University of Connecticut,** Biomedical Engineering Graduate Seminar, “*Characterization of invasive and non-invasive Neural Responses in Patients with Neurological Impairment*”, Dec, 2017.
- **University of Rhode Island,** Electrical, Computer, & Biomedical Engineering Graduate Seminar, “*Invasive and Non-invasive Brain-Computer Interfaces*”, Dec, 2017.
- **University of Rhode Island,** Interdisciplinary Neuroscience Colloquium, *“Characterization of Brain Activity for Invasive and Non-invasive Brain-Computer Interfaces”,* Dec, 2017.
- **Congress of Neurological Surgeons,** “*Beta Oscillations during Pallidal Deep Brain Stimulation in Parkinson’s Disease,*” Oct, 2017.
- **Boston Children Hospital,** “*Brain-Computer Interfaces in Patients with Amyotrophic Lateral Sclerosis*”, Sept, 2017.
- **National Center for Adaptive Neurotechnology,** *“Neural Signal Processing in Patients with Neurological Impairment,” Sept,* 2017.
- **Rhode Island Hospital,** “*Characterization of Brain Activity in Patients with Neurological Impairments,*” Nov, 2016.
- **Brown University, “***Characterization of Brain Activity in Patients with Neurological Impairments,*” Oct, 2016.
- **University of Rhode Island,** Electrical, Computer, & Biomedical Engineering Graduate Seminar, “*Brain Connectivity Analysis in Patients with Neurological Impairments,*” Sept, 2016.
- **6th International Brain-Computer Interface Meeting** *“Techniques on Brain Connectivity Analysis,*” June, 2016.

- **University of California, at San Francisco (UCSF),** Brain Seminar, *"Brain Connectivity Analysis in Parkinson's Disease,"* April, 2016.
- **Skyline College, San Bruno,** *"Brain-Computer Interface for Assistive Technology,"* May, 2016.
- **University of California, at San Francisco (UCSF),** Brain Seminar, *"BCI Performance Variations in Patients with Amyotrophic Lateral Sclerosis,"* 2015.
- **Old Dominion University**, Electrical & Computer Engineering Graduate Seminar, "*Multichannel Characterization of Brain Activity in Patients with Neurological Disease,*" 2015.
- **Fifth International Brain-Computer Interface Meeting**, *"EEG Correlates of Performance During Long-Term Use of a P300 BCI by Individuals With Amyotrophic Lateral Sclerosis,"* 2013.
- **18th International Conference on Biomedical Engineering (ICBME),** *"An Improved P300 Based Brain- Computer Interface: Feature Selection Based Mutual Information,"* 2011.
- **Iran University of Science and Technology**, Department of Biomedical Engineering, "*Brain-Computer Interface Systems based on P300 Signal,*" 2009.
- **Iran University of Science and Technology**, Department of Biomedical Engineering, "*A Log-Linearized Gaussian Mixture Network and its Application to EEG Signal Classification,*" 2009.
- **Ferdowsi University of Mashad**, Department of Electrical Engineering, "*Parameter Control in Wind Turbines Connected to a Double Fed Induction Generator with Matlab Simulation,"* 2008.

7. STUDENT SUPERVISION

7.1 DOCTORAL RESEARCH ADVISORY

GRADUATED

1. **Roohollah Jafari*,** PhD, URI (FA17-SU21), Dissertation: Spectro-Temporal Based Quantification of Brain Functions in Neurological Disorders
2. **Alyssa Zisk*,** Ph.D., URI (FA18-SP21), Dissertation: Quantifying and Compensating for P300 Variations in Amyotrophic Lateral Sclerosis
3. **Sarah Ismail Hosni*,** Ph.D., URI (FA17-FA21), Dissertation: Multimodal Integration of Motor Imagery-based Signatures for Neural Response Classification
4. **Seyyed Bahram Borgheai*,** Ph.D., URI (FA18-SP22), Dissertation: Incorporating Hemodynamic Cognitive Neuromarkers for Personalized Assistive Communication Technology

TO BE GRADUATED

5. **John McLinden*,** PhD, URI (FA20-), Dissertation: Electro-vascular dynamics during auditory processing: variation along the schizotypy continuum
   Expected graduation: SP25
6. **Behtom Adeli*,** PhD, URI (FA23-), Dissertation: TBD

7. **Saba Bijari*,** PhD, URI (FA23-), Dissertation: TBD
8. **Maryam Norouzi**,** PhD, URI (FA23-), Dissertation: TBD

* Primary Ph.D. Advisor
** Co-major Ph.D. Advisor

7.2 MASTER'S RESEARCH ADVISORY

GRADUATED

1. **James McIntyre*,** MS, URI (FA20-SU22) Project: Design of a Novel Virtual Reality Object Orientation Task Memory to Asses fNIRS Neural Associations
2. **John McLinden*,** MS, URI (SU18-SP20) Project: Disruptions of Cortico-Kinematic Interactions in Parkinson's Disease
3. **Debanjan Borthakur**,** MS, URI (SU17-SU18) Dissertation: Quantifying the Effects of Motor Tasks on Corticokinematic Coherence in Parkinson's Disease

TO BE GRADUATED

4. **Alex Cerullo*,** MS, URI (SP23-)

* Primary Advisor
** Co-advisor

7.3 URI GRADUATE ADVISORY SERVICES

1. **Jay Vincelli,** PhD, URI (SP20-SU24) Inside Committee Member; Dissertation: Development and Evaluation of Novel Electrode Designs and Gels for Use in Electroencephalography
2. **Gozde Cay,** PhD, URI (SU20-SP22) Additional Committee Member; Dissertation: Design of a Wearable Multi-Sensory based Chest Belt Integrated with IoT Functions for Respiration Monitoring
3. **Rosa Ghatee**, PhD, URI (FA18) Oral Doctoral Comprehensive Exam Additional Committee Member
4. **Jennifer Picucci**, PhD, URI (FA18) Oral Doctoral Comprehensive Exam Additional Committee Member
5. **Michael Tamayo**, MS, URI (FA16-SP18) Committee Member; Dissertation: Automated High Frequency Oscillation Detection and Seizure Onset Zone Estimation Using TCREs.
6. **Leandro Moreira da Costa**, PhD, URI (FA17) Oral Doctoral Comprehensive Exam Additional Committee Member.

7.4 EXPERIMENTAL LEARNING PROJECT

1. **Debanjan Borthakur,** M.Sc., URI (SU17-FA17) Interdisciplinary collaborative projects with Electro Standard Laboratories (ESL) Company, "Developing Closed Loop Robotic Hand for the Amputees".

2. **James Gannon,** BS, URI (FA17) Interdisciplinary collaborative projects with Electro Standard Laboratories (ESL) Company, “Developing Closed Loop Robotic Hand for the Amputees”.

8. SERVICE

8.1 UNIVERSITY SERVICE (URI)

- **Chair**, Biomedical Engineering Faculty Search Committee (FA24-Present)
- **Member,** Graduate Online Certificate program (FA23-Present)
- **Member,** Faculty Senate Committee, University of Rhode Island (SU23-Present)
- **Member**, Intellectual Property (IP) Committee, University of Rhode Island (SP24-Present)
- **Member**, Research and Space Committee, University of Rhode Island (SP24-Present)
- **Member**, Undergraduate Affairs, University of Rhode Island (FA24-Present)
- **Member**, ECBE Graduate Committee (SP23)
- **Host:** Multimodal Neuroimaging Workshop, University of Rhode Island (SU22).
- **Member**, Biomedical Engineering Faculty Search Committee (FA20-SP21)
- **Member**, Graduate Comprehensive Exam Committee (SU20)
- **Member**, ECBE Graduate Award Committee (SP20)
- **Course Development:** BME 473/ELE 573, Brain Signal Analysis and Applications (SP20)
- **Host:** An international visiting scholar, Dr. Michael Cohen from Radboud University, Netherland (SP19).
- **Member**, ECBE Graduate Award Committee (SP19)
- **Member**, Graduate Comprehensive Exam Committee (SP19)
- **Member**, Biomedical Strategic Plan Committee (SP19)
- **Member**, Neuroscience Internal Review Task Force Committee (FA17-SP18)
- **Member**, ECBE Graduate Award Committee (SP18)
- **Course Development:** ELE 594, Brain-Computer Interfaces (FA17)
- **Member**, Robotic Faculty Search Committee (FA16-SP17)
- **Member**, Interdisciplinary Neuroscience Program (FA16-present)
- **Faculty**, George & Anne Ryan Institute for Neuroscience (FA16-present)

8.2 OUTREACH ACTIVITY

- NSF panel reviewer (FA24)
- Representing BCI Demo at URI Brain Fair (SP24)
- NSF panel reviewer (SP24)

- NSF ad-hoc panel reviewer (SP24)
- **Host:** Multimodal Brain-Computer Interfacing Workshop in 10th International Brain-Computer Interface, Belgium (SU23).
- NSF panel reviewer (SP23)
- NSF panel reviewer (SP22)
- NSF panel reviewer (FA21)
- Representing BME program at COE Admitted Freshman Virtual Programs (SP21)
- Represented BME program at URI Welcome day (FA20)
- Mentored a team of multiple students at the Neuromatch Academy, an online school for computational neuroscience (SU20).
- Volunteer at Virtual Walk to Defeat ALS Event (SU20).
- URI Undergraduate proposal panel (SP20)
- Represented BME program at URI Welcome day (SP20)
- Presented at the ALS Symposium held by ALS Association Rhode Island Chapter (FA19)
- NSF ad-hoc panel reviewer (SU19)
- Volunteer at Walk to Defeat ALS Event (SU19)
- NSF panel reviewer (SP19)
- Representing BCI Demo at URI Brain Fair (SP19)
- URI Fall 2018 Open House (FA18)
- Represented BCI Demo at Brain Fair (SP18)
- Represented BCI Demos and Posters at Introduction to fNIRS Workshop (FA17)
- Represented BME program at Welcome day (SP17)
- Represented BCI Demo for ALS Home Users at ALS Assistive Technology Hackathon (F17)

8.3 JOURNAL & CONFERENCE REFEREE

2024 *Review Editor*: Frontiers in Human Neuroscience (journal); *Reviewer:* IEEE on Neural System and Rehabilitation Engineering (journal), Computers in Biology and Medicine (journal)

2023 *Review Editor*: Frontiers in Human Neuroscience (journal); *Reviewer:* Scientific Report--Nature (journal), IEEE on Neural System and Rehabilitation Engineering (journal), Frontiers in Neuroscince (journal), Frontiers in Neuroergonomics (journal), Journal of Neural Engineering (journal), IEEE on Neural Networks and Learning Systems (journal)

2022 *Review Editor*: Frontiers in Human Neuroscience (journal); *Reviewer:* Clinical Neurophysiology (journal), Entropy (journal), Frontiers in Neuroscince (journal), Journal of Neural Engineering (journal), Neural Computing and Applications (journal)

2021 *Reviewer:* Brain (journal), Clinical Neurophysiology (journal), Entropy (journal), Expert Systems with Applications (journal), Journal of Neural Engineering (journal), Neuroscience Letters (journal).

2020 *Reviewer:* IEEE Internet of Things (journal), IEEE Sensors Letters (journal), Journal of Neural Engineering (journal), Neural Regeneration Research (journal), Neurobiology of Aging (journal), World Journal of Biological Psychiatry (journal)

2019 *Reviewer:* Clinical Neurophysiology (journal), IEEE on Biomedical Engineering (journal), IEEE on Neural System and Rehabilitation Engineering (journal), Neural Computing & Applications (journal)

2018 *Editorial Board:* IEEE Sensors Letters (journal); *Technical Committee and Reviwer*: International Conference on Biomedical Technology; *Reviewer:* IEEE on Biomed and Health Informatics (journal), IEEE on Neural System and Rehabilitation Engineering (journal), International Brain-Computer Interfaces Meeting.

2017 *Reviewer:* Journal of Clinical Neurophysiology (journal)

2016 *Reviewer:* Association for the Advancement of Medical Instrumentation, International Conference on the IEEE Engineering in Medicine and Biology Society

2015 *Reviewer:* International Conference on the IEEE Engineering in Medicine and Biology Society

8.4 PROFESSIONAL MEMBERSHIPS

2014- Present Society for Neuroscience (SfN)

2016- Present Brain-Computer Interface (BCI) Society

2018- Present Brain Community, IEEE

2016- Present IEEE Member

2016- Present IEEE Engineering in Medicine and Biology Society

2016- Present IEEE Signal Processing Society

9. HONORS

- Recipient of The Global Mobility Travel Grant ($1000) (2023).
- Recipient of The Global Mobility Travel Grant ($2,000) (2021).
- Recipient of National Science Foundation SCH Aspiring PI Award (2020).
- Recipient of The Global Mobility Travel Grant ($1,500) (2020).
- Recipient of Distinguished Visiting International Scholar Award to host Dr. Michael Cohen from Radboud University Medical Center, Nijmegen, Netherlands ($8,500) (2018).
- Recipient of Rhode Island IDeA Network for Excellence in Biomedical Research Award ($200,000) (2017).
- Fourth Annual ODU Research Achievement Award (2014).
- Research abstract entitled: “EEG Correlates of Performance During Long-Term Use of a P300 BCI by Individuals With Amyotrophic Lateral Sclerosis” was categorized in the

overview of the most exciting BCI research worldwide and selected as an oral presentation in the Fifth International BCI Meeting, Pacific Grove, California (2013).

9.1 HONORS OF MY STUDENTS

- 2024: Abstract entitled “EEG-fNIRS Causal Interactions during Auditory Processing" selected for oral presentation and travel award, Neuroscience of the Everyday World Conference-**John McLinden**
- 2024: NSF Non-Academic Research Internship for Graduate Student (INTERN) Supplemental Funding-**John McLinden**
- 2024: URI Outstanding Graduate Research Award-**John McLinden**
- 2022: NSF Non-Academic Research Internship for Graduate Student (INTERN) Supplemental Funding-**John McLinden**
- 2021: URI Graduate Student Research and Scholarship Excellence Award in Life Sciences, Physical Sciences, and Engineering- **Sarah Ismail Hosni**
- 2021: URI Outstanding Graduate Research Award-**Sarah Ismail Hosni**
- 2021: URI Outstanding Graduate Research Award-**Alyssa Hillary Zisk**
- 2021: URI Outstanding Poster Award-**Sarah Ismail Hosni**
- 2021: URI Outstanding Poster Award-**Alyssa Hillary Zisk**
- 2020: NSF Non-Academic Research Internship for Graduate Student (INTERN) Supplemental Funding-**Seyyed Bahram Borgheai**
- 2020: URI Outstanding Graduate Research Award- **Seyyed Bahram Borgheai**
- 2020: URI Outstanding Poster Award-**Sarah Ismail Hosni**
- 2020: URI Outstanding Poster Award-**Roohollah Jafari Deligani**
- 2020: URI Outstanding Poster Award-**Alyssa Hillary Zisk**
- 2019: URI Graduate Award-**Seyyed Bahram Borgheai**
- 2019: URI Graduate Award-**Sarah Ismail Hosni**
- 2019: URI Graduate Award-**John McLinden**
- 2018: 7th BCI meeting Student Award-**Sarah Ismail Hosni**
- 2018: 7th BCI meeting Student Award-**Roohollah Jafari Deligani**