

CURRICULUM VITAE

RAMANA KUMAR VINJAMURI

Updated Apr 2, 2026

EDUCATION

Ph.D.	2008	University of Pittsburgh, Pittsburgh, PA, Electrical & Computer Engineering
M.S.	2004	Villanova University, Villanova, PA, Electrical Engineering
B.S.	2002	Kakatiya University, Telangana, India, Electrical Engineering

Experience in Higher Education

2023 – Present	University of Maryland, Baltimore County, Associate Professor, CSEE
2026 – Present	Faculty Affiliate, Public Health Research Center, CAHSS, UMBC
2024 – Present	BRAIN, NSF IUCRC Center, Phase II, Site Director
2024 – Present	UMB/UMBC ICTR & AI Cyber Core, Center Director
2024 – Present	Manipal Academy of Higher Education, India, Adjunct Faculty, MCHP
2013 – Present	Indian Institute of Technology, Hyderabad, Visiting Professor, BME
2020 – 2023	University of Maryland, Baltimore County, Assistant Professor, CSEE
2013 – 2020	Stevens Institute of Technology, NJ, Assistant Professor, BME
2012 – 2013	Johns Hopkins University, Research Assistant Professor, BME
2012 – 2013	Johns Hopkins University, Whiting School of Engineering, Lecturer, BME
2008 – 2012	University of Pittsburgh, Pittsburgh, Post-doctoral Associate, PM&R
2004 – 2008	University of Pittsburgh, Pittsburgh, Graduate Research Assistant, ECE
2002 – 2004	Villanova University, Graduate Research Assistant, EE

Experience in Other than Higher Education

2018 – Present	Beable Health Private Ltd, India, Visiting Researcher
2022 – Present	National Institutes of Health, Natnl. Inst. Drug Abuse (NIDA), Visiting Scientist

Honors Received

2026	Excellence in Education Award at Education 2.0 Conference
2026	UMBC Marilyn E. Demorest Faculty Advancement Award
2025	The RealLIST Innovators Award by Technical.ly as one of the top 15 most influential developers, engineers, scientists and innovators in MD
2025	UMBC CWIT Outstanding Research Partner Award
2024	Erasmus + MOBILE23 Visiting Fellowship, U Porto, Portugal, Fall, 2024
2024	CRA LEVEL UP Fellowship, Spring, 2024
2023	Winner, Maryland New Venture Program Pitch Competition, Spring 2023 Cohort, BWTech, UMBC, \$5000 cash award
2019	NSF CAREER Award
2019	Award of Research Excellence. Nominated. Stevens Institute of Technology, NJ
2018	Harvey N Davis Distinguished Teaching Award. Stevens Inst. of Tech., NJ

2018	Top 12 BCI Technologies in the world. BCI Award Foundation.
2013	Sheth Pitt Young Alumni Award. Finalist.
2011	Senior Member of Institute of Electrical & Electronics Engineers (IEEE)
2011	Mary E Switzer Merit Award, National Institute on Disability Independent Living Rehabilitation Research (NIDILRR)
2005	Graduate Research Fellowship, University of Pittsburgh
2004	Graduate Teaching Fellowship, University of Pittsburgh
2002	Graduate Research Fellowship, Villanova University

Research Support and/or Fellowships

2026 – 2027	\$75,000, UM-BILD, P.I.
2026 – 2028	\$100,000, UMMC Innovation Challenge Award, CO-P.I.
2026 – 2027	\$15,000, Technology Catalyst Fund, P.I.
2026 – 2027	\$10,000, FEAT, P.I.
2026 – 2027	\$50,000, NSF I-CORPs, P.I.
2025 – 2026	\$20,000, COEIT Interdisciplinary Proposal (CIP) Award, P.I.
2025 – 2026	\$1,500, UMBC Global Learning Lab Fellowship, P.I.
2025 – 2026	\$20,000, FY25 Facilities and Equipment Fund, P.I.
2025 – 2026	\$8,000, Global Initiative of Academic Networks (GIAN), India
2024 – 2025	\$20,000, COEIT Interdisciplinary Proposal (CIP) Award, P.I.
2024 – 2025	\$10,000, FEAT, P.I.
2024 – 2027	\$1,200,000, NSF IUCRC BRAIN, P.I.
2023 – 2024	\$50,000, NSF I-CORPs, P.I.
2023 – 2024	\$25,000, Faculty Entrepreneurship Accelerator Fund (FEAT), P.I.
2023 – 2024	\$24,000, Imaging Research Center (IRC) Fellowship, P.I.
2022 – 2023	\$95,995, NSF Supplement for NSF CAREER Award, P.I.
2022 – 2023	\$100,000, NIDILRR, SBIR, Phase I, Co-P.I. (UMBC share: \$32,663)
2021 – 2022	\$25,000, UMBC START Grant, P.I.
2020 – 2023	\$15,000, National Science Foundation, IUCRC Planning Grant, P.I.
2019 – 2024	\$499,984, National Science Foundation, CAREER Award, P.I.
2019 – 2023	\$143, 573 (PI Share: \$57,646), US-India Sci. & Tech. Endow. Fund Grant, P.I.
2019 – 2020	\$50,000, New Jersey Health Foundation, P.I.
2018 – 2020	\$35,000, New Jersey Health Foundation, P.I.
2018 – 2020	\$30,000, Deans Lab Improvement Initiative, Stevens Inst. of Tech., PI
2016 – 2017	\$35,000, New Jersey Health Foundation, P.I.
2017 – 2018	\$15,000, Ignition Grants Initiative, Stevens Inst. of Tech, P.I.
2016 – 2017	\$15,000, Ignition Grants Initiative, Stevens Inst. of Tech, P.I.
2014 – 2020	\$23,500, Center for Healthcare Innovation, Stevens Inst. of Tech, P.I.
2010 – 2011	\$65,000, Mary E Switzer Merit Fellowship, NIDILRR, P.I.

Pending/ Under review

2026 –	\$3,000,000, NSF Trailblazer, P.I. (Submitted Preliminary Proposal)
2026 –	\$750,000, NCAE, CO-P.I. (Submitted April 10)
2026 –	\$180,000, TEDCO MII, P.I. (To be resubmitted April 15)
2026 –	\$1,200,000, NSF, PFI, P.I. (Jan 2026, Selected for GEM coaching)
2026 –	\$1,000,000, NSF, P.I. (Resubmitted Jan 2026)
2022 –	\$500,000, NIDILRR, DRRP, P.I. (Received feedback, Waiting for solicitation)

Postdoctoral Fellows

Branesh Pillai, Research Assistant Professor, 2023-2024 (Tenure track Assistant Professor, AIT, Thailand)
Sai Praveen Kadiyala, Postdoctoral Fellow, 2022-2024 (Staff Scientist, Albert Einstein Medical College)
Saurav Kumar, Postdoctoral Fellow, 2022-2023 (Tenure track Assistant Professor, IIT Jodhpur, India.)

Ph.D. Students

Tawsif Sheikh Ahmad, in progress, Advisor, UMBC
Shivansh Sharma, in progress, Advisor, UMBC
Sruthi Sundharram, in progress, Advisor, UMBC (Completed Portfolio in Spring 2026)
Sina M. Kaviri, in progress, Advisor (Completed Candidacy in Fall 2025), UMBC
Thamizh Mani, in progress, Member, MAHE
Sidharth Mali, in progress, Member, Manipal Academy of Higher Education (MAHE)
Parthan Olikkal, in progress, Advisor (Completed Candidacy in Spring 2023), UMBC
Farshad Safavi, 2025, Advisor, UMBC (Postdoctoral fellow, UMB)
Janerra Allen, 2025, Member, UMBC
Sravani Varanasi, in progress, Member, UMBC
Javad Bahrami, in progress, Member, UMBC
Mohd. Ebrahimabadi, in progress, Member, UMBC
Mohd. Toufiq Hasan Anik, in progress, Member, UMBC
Dhandeep Challagundla, in progress, Member, UMBC.
Hanlu Yang, in progress, Member, UMBC
Fahad Siddiqui, in progress, Member, UMBC
Rui Jin, in progress, Member, UMBC
Dingyi Pei, 2024, Advisor, UMBC (Postdoctoral Researcher, Hennepin Cty Med Ctr, Minneapolis, MN)
Rami Mowakeaa, 2022, Member, UMBC
Yao Yao, 2022, Member, UMBC
Deepa Gupta, 2022, Member, UMBC
Martin Burns, 2020, Advisor, Stevens Institute of Technology (Senior Robotics Engineer, Walmart)
Vrajeshri Patel, 2018, Advisor, Stevens Institute of Technology (Bioengineer, Leidos, Naval Health Center)
Hanyan Li, 2019, Member, Stevens Institute of Technology
Wenbo Liu, 2019, Member, Stevens Institute of Technology
Mohammad Alnakhli, 2018, Member, Stevens Institute of Technology
Wonyoung Kim, 2017, Member, Stevens Institute of Technology

At Stevens Institute of Technology (2013 - 2020), PhD students from Vinjamuri Lab have won 11 awards including IEEE NSF Award for Young Professionals, 1st and 2nd places in International Society of Pharmaceutical Engineering Annual Meeting and Johnson and Johnson Engineering Showcase. The two PhD students who have graduated from Vinjamuri Lab have received awards for Outstanding Research by a PhD student in Biomedical Engineering.

Master's Students

Sumana Sarvani Vummadisetty, in progress, Advisor, UMBC
Garvita Jain, in progress, Advisor, UMBC (Expected MS in Sum 2026)
Shivansh Sharma, in progress, Advisor, UMBC (Expected MS in Sum 2026, Staying for PhD at UMBC)
Parthan Olikkal, 2021, Advisor, UMBC (PhD Candidate in Vinjamuri Lab)
Aniket Shah, 2019, Member, Stevens Institute of Technology
Kevin Walsh, 2019, Member and Reader, Stevens Institute of Technology
Hafsa Nadia, 2018, Advisor, Stevens Institute of Technology

David Hollinger, 2018, Member and Reader, Stevens Institute of Technology

Undergraduate Students

Chris Dollo (CWIT Scholar), 2024, Mentor, UMBC
Oritsejolomisan Mebaghanje (CWIT Scholar), 2024, Mentor, UMBC
Destiny Deshields (Meyerhoff Scholar), 2024, Mentor, UMBC
Rusham Bhatt (Meyerhoff Scholar), 2024, Mentor, UMBC
Asantewah Nanyante (Meyerhoff Scholar), 2023, Mentor, UMBC
Caly Ferguson (Meyerhoff Scholar), 2023, Mentor, UMBC
Xavier Smith (Meyerhoff Scholar), 2022, Mentor, UMBC
Matthew Makila (Meyerhoff Scholar), 2022, Mentor, UMBC
Xavier Smith (U-RISE Scholar), 2022, Mentor, UMBC
Erick Kengni (Meyerhoff Scholar), 2022, Mentor, UMBC
Laura McAllister (CWIT Scholar), 2021, Mentor, UMBC
Emily King (CWIT Scholar), 2021, Mentor, UMBC
Jimmy Coleman (Meyerhoff Scholar), 2021, Mentor, UMBC

At Stevens Institute of Technology (2013 - 2020), undergraduate students (listed below) in Vinjamuri Lab have won 9 Center for Healthcare Innovation Scholarships, 5 Innovation and Entrepreneurship Summer Scholarships, 6 Independent College Fund of New Jersey Program, and 1 PSEG program for advancing Science, Technology and Engineering.

Michael Obando, Stevens Pinnacle Research Scholar, 2019; Zamin Akmal, Summer Research Volunteer, 2019; Skylar Migliaccio, CHI Research Scholar, 2019-2020; Skylar Migliaccio, Stevens Pinnacle Research Scholar, 2019. Magdalena Slonski, Stevens Pinnacle Research Scholar, 2018; Michael Obando, ICFNJ Research Fellow, 2018-2020; Brandon Herb, I&E Summer Research Fellow, 2018; Shreya Anjaria, CHI Research Fellow, 2018-2019; Hirra Shirani, ICFNJ Research Fellow, 2018-2019; Daniel Cleary, Summer Research Scholar, 2018; Katie Van Orden, Pinnacle Research Scholar, 2016-; Rachel Rosa, Stevens Scholar, CHI Research Fellow, 2016-; Sal Finocchiaro, ICFNJ Research Fellow, 2017-2018; Jacob Coumans, ICFNJ Research Fellow, 2017-2018; Jay Patel, ICFNJ Research Fellow, 2017-2018; Stephanie Sayegh, ICFNJ Research Fellow, Summer 2016-2017; Christian Jensen, Pinnacle Research Scholar, Summer 2017; Gerald Lamina, I&E Research, 2016; Katie Van Orden, Pinnacle Scholar Research, 2016; Jeffrey Paine, Stevens Scholar Research, Summer 2016; Rachel Rosa, Stevens Scholar Research, 2016; Michelle Schumacher, Stevens Scholar Research, Summer 2016; Julia Stika, Summer Research Student, Summer 2016; Richard Schermerhorn, Pinnacle Scholar Research, 2016; Zach Zavoda, I&E Research, 2016; Jamie Craig, Scholars and CHI Research, 2015-2016; Poojita Thukral, BITS Goa, India, Senior Design 2015; Sara Hassan, CHI Research, 2014-15; Akash Sharma, ChemBio Senior Design 2014; Kevin Doherty, ECE, Summer Research 2014; Faisal Mansuri, BME, Summer Research 2014; Piotr Kulik, ECE, Summer Research 2014; Tim Dana, BME, Summer Research 2014; Mike Magglio, BME, Summer Research 2014; Martin Burns, BME, I&E Summer Research 2014.

Undergraduate student researchers teaming up with graduate students in my lab have published journal papers, conference papers and book chapters and even patent applications as indicated in the following section

High School Students

Arjun Raina, 2024, Mentor, UMBC
Abhay Raina, 2024, Mentor, UMBC
Gaurang Pendyala, 2024, Mentor, UMBC

Akshara Ajendla, 2024, Mentor, UMBC
 Ian Jackson, 2021, Mentor, UMBC
 Krishna Kasi, 2022, Mentor, UMBC
 Varsha Penumalee, 2022, Mentor, UMBC
 Smrdhi Mahajan, 2022, Mentor, UMBC
 Niyati Sharma, 2022, Mentor, UMBC
 Helen Myerson, 2018, Mentor, Stevens Institute of Technology
 Rohan Mukundan, 2016 - 2018, Mentor, Stevens Institute of Technology
 Shweta Vazhappily, 2015, Mentor, Stevens Institute of Technology
 Srushti Karra, 2014, Mentor, Stevens Institute of Technology

High school student researchers teaming up with graduate and undergraduate students in my lab have published journal papers, conference papers and book chapters as indicated in the following section.

PUBLICATIONS, PRESENTATIONS, AND CREATIVE ACHIEVEMENTS

Note: In my field of research, journal articles are considered as important publications, then edited books, conference papers, and book chapters, respectively, in that order. It is a standard practice in the journals and conferences I have submitted that the senior author and corresponding author is the last author. The student is the first author. Undergraduate student researchers are indicated with a † symbol and high school student researchers are indicated with a # symbol.

Metrics: h-index: 22; i10-index: 40; Total Citations: 2197. All citations are based on Google Scholar as of April 2, 2026. The most recent Google Scholar Profile can be found here:

<https://scholar.google.com/citations?user=Ok92zD4AAAAJ&hl=en>

- **Peer-Reviewed Works**

- **Journal Articles**

1. P. Olikkal, C. Dollo, A. Ajendla, A. Clemmensen, and R. Vinjamuri, "Reconstructing Hand Gestures with Synergies Extracted from Dance Movements", *Nature Scientific Reports*. Sci Rep 15, 41670 (2025). <https://doi.org/10.1038/s41598-025-25563-7>. (Impact Factor: 4.3)
2. K-J. Wang, R. Vinjamuri, M. Alimardani, T. K. Reddy, Z.H. Mao, "Editorial: NeuroDesign in human-robot interaction: the making of engaging HRI technology your brain can't resist", *Frontiers in Robotics and AI*. 12 – 2025. DOI=10.3389/frobt.2025.1699371. (Impact Factor 3.0).
3. F. Safavi, K. Patel and R. Vinjamuri, "Facial Expression Recognition with an Efficient Mix Transformer for Affective Human-Robot Interaction," in *IEEE Transactions on Affective Computing*, doi: 10.1109/TAFFC.2025.3567966. 2025. (Impact Factor: 9.8)
4. F. Safavi, V. R. Venkannagari, D. Parikh and R. K. Vinjamuri, "Deep Fusion of Neurophysiological and Facial Features for Enhanced Emotion Detection," in *IEEE Access*, vol. 13, pp. 67434-67445, 2025, doi: 10.1109/ACCESS.2025.3555934. (Impact Factor: 3.6)
5. S. M. Kaviri, and R. Vinjamuri, Decoding motor execution and motor imagery from EEG with deep learning and source localization, *Biomedical Engineering Advances*, Volume 9, 2025, 100156, ISSN 2667-0992, <https://doi.org/10.1016/j.bea.2025.100156>. (Impact Factor: 4.6)
6. D. Pei and R. Vinjamuri. Decoding and Generating Synergy-based Hand Movements using Electroencephalography during Motor Execution and Motor Imagery. *Biomedical Engineering Advances*. Volume 9, 2025, 100152, ISSN 2667-0992, <https://doi.org/10.1016/j.bea.2025.100152>. (Impact Factor: 4.6)
7. M.P. Chanu, G. Kumar, R. Vinjamuri, N. M. Kakoty. Computational model for control of hand movement in Parkinson's disease using deep brain stimulation. *Exp Brain Res* 243, 74 (2025). <https://doi.org/10.1007/s00221-025-07026-7> (Impact Factor: 2.28)

8. A. J. Kalita, M. P. Chanu, N. M. Kakoty, R. Vinjamuri, S. Borah. Functional evaluation of a real-time EMG controlled prosthetic hand. *Wearable Technologies*. 2025;6:e18. doi:10.1017/wtc.2025.7 (Impact Factor: 4.4)
9. D. Pei, S. Tirumala, K. T. Tun, A. Ajendla, and R. Vinjamuri, "Identifying neurophysiological correlates of stress", *Frontiers in Medical Engineering*. Vol.2. 2024. 1434753. DOI=10.3389/fmede.2024.1434753. (Impact Factor: 3.8)
10. S. M. Kaviri, and R. Vinjamuri. "Integrating Electroencephalography Source Localization and Residual Convolutional Neural Network for Advanced Stroke Rehabilitation". *Bioengineering* 2024, 11, 967. <https://doi.org/10.3390/bioengineering11100967> (Impact Factor: 3.8)
11. K. Chen, H. Wang, A. Satyanarayana, R. Vinjamuri, and S. P. Kadiyala. "A framework for empirical fourier decomposition-based gesture classification for stroke rehabilitation", *IEEE Internet of Things Journal*. 2024. doi: 10.1109/JIOT.2024.3491674. (Impact Factor: 10.6)
12. K. Chen, R. Vinjamuri, H. Wang, and S. P. Kadiyala. "Generative AI based difficulty level design of serious games for stroke rehabilitation.", *IEEE Internet of Things Journal*. 2024. doi: 10.1109/JIOT.2024.3450653. (Impact Factor: 10.6)
13. P. Olikkal, D. Pei, B. Karri, A. Satyanarayana, N. Kakoty, and R. Vinjamuri, "Biomimetic learning of hand gestures in a humanoid robot", *Frontiers in Human Neuroscience* 18, 1391531. 2024. (Impact Factor: 2.4 | CiteScore 4.7)
14. F. Safavi, P. Olikkal, D. Pei, S. Kamal, H. Meyerson, V. Penumalee, and R. Vinjamuri, "Emerging Frontiers in Human-Robot Interaction", *Journal of Intelligent and Robotic Systems* 11(2), 45. 2024. (Impact Factor: 3.4)
15. P. C. Maibam, D. Pei, P. Olikkal, R. Vinjamuri, and N. Kakoty. Enhancing prosthetic hand control: A synergistic multi-channel electroencephalogram. *Wearable Technologies*. 2024;5:e18. doi:10.1017/wtc.2024.13. (Impact Factor: 3.4)
16. K. Jambhale, S. Mahajan, B. Rieland, N. Banerjee, A. Dutt, S.P. Kadiyala, and R. Vinjamuri, "Identifying biomarkers for accurate detection of stress", *Sensors*. 2022. (Impact Factor: 3.576)
17. P. Olikkal, D. Pei, T. Adali, N. Banerjee, and R. Vinjamuri, "Data fusion-based musculoskeletal synergies in the grasping hand", *Sensors*. 2022. (Impact Factor: 3.576)
18. D. Pei, P. Olikkal, T. Adali, and R. Vinjamuri, "Reconstructing synergy-based hand grasp kinematics from electroencephalographic signals", *Sensors*. 2022. (Impact Factor: 3.576)
19. D. Pei, P. Olikkal, T. Adali, and R. Vinjamuri, "Dynamical synergies in multidigit hand prehension", *Sensors*. 2022. (Impact Factor: 3.576)

---Prior to joining UMBC---

20. M. Burns, D. Pei, R. Vinjamuri. "Myoelectric control of a soft hand exoskeleton using kinematic synergies," *IEEE Transactions on Biomedical Circuits and Systems*. 2019. (Impact Factor: 4.29).
21. M. Burns, D. Pei, R. Vinjamuri. "Dynamic control of virtual hand grasp using spatiotemporal synergies," *IEEE Access*. 2019. (Impact Factor: 3.367).
22. D. Pei, V. Patel, M. Burns, R. Chandramouli, R. Vinjamuri. "Neural decoding of synergy-based hand movements using electroencephalography," *IEEE Access*. 2019. (Impact Factor: 3.367).
23. D. Pei, M. Burns, R. Chandramouli, R. Vinjamuri. "Decoding asynchronous reaching in electroencephalography using stacked autoencoders," *IEEE Access*. 2018: 52889-52898. (Impact Factor: 3.367).
24. V. Patel, M. Burns, R. Chandramouli, R. Vinjamuri. Biometrics based on hand synergies and their neural representations. *IEEE Access*. Vol.5. 13422-13429. 2017. (Impact Factor: 3.367).
25. V. Patel, M. Burns, P. Thukral, I. Florescu, R. Chandramouli, R. Vinjamuri. Hand grasping synergies as biometrics. *Frontiers in Bioengineering and Biotechnology*. Vol.5. 2017. (Impact Factor: 5.89).

26. V. Patel, J. Craig, M. Schumacher[†], M. Burns, I. Florescu and R. Vinjamuri. Synergy repetition training versus task repetition training in acquiring new skill. *Frontiers in Bioengineering and Biotechnology*. Vol.5. 2017. (Impact Factor: 5.89).
27. M. Burns, V. Patel, I. Florescu, K. Pochiraju, R. Vinjamuri. Low dimensional synergistic representation of bilateral reaching movements. *Frontiers in Bioengineering and Biotechnology*. Vol.5. 2017. (Impact Factor: 5.89).
28. V. Patel, M. Burns, R. Vinjamuri. Effect of visual and tactile feedback on kinematic synergies in grasping hand. *Medical and Biological Engineering and Computing*, 2015. (Impact Factor: 2.602).
29. V. Patel, M. Burns, Z.H. Mao, N. Crone, R. Vinjamuri. Linear and nonlinear synergies in grasping hand. *Journal of Bioengineering & Biomedical Science*, 2015. (Impact Factor: 1.0 CiteScore: NA).
30. R. Vinjamuri, V. Patel, M. Powell, N. Crone. Candidates for synergies: principal components vs. linear discriminants. *Computational Intelligence and Neuroscience*, Vol. 2014, 2014. (Impact Factor: 3.633).
31. J. Collinger, R. Vinjamuri, A. Degenhart, D. Weber, G. Sudre, M. Boninger, E. Tyler-Kabara, and W. Wang. "Motor-related brain activity during action observation: a neural substrate for electrocorticographic brain-computer interfaces after spinal cord injury." *Frontiers in Integrative Neuroscience*. Vol. 8, 2014. (Impact Factor: 4.677).
32. W. Wang, J. L. Collinger, A. D. Degenhart, E. C. Tyler-Kabara, A. B. Schwartz, D. W. Moran, B. Wodlinger, R. Vinjamuri, J. Kelly, R. Ashmore, M. Boninger. An Electrocorticographic Brain Interface in an Individual with Tetraplegia. *PLOS ONE*, 8(2):e55344, 2013. (Impact Factor: 3.24).
33. R. Vinjamuri, D. Weber, Z.-H. Mao, J. Collinger, A. Degenhart, J. Kelly, M. L. Boninger, E. C. Tyler-Kabara and W. Wang. Towards synergy-based control in brain machine interfaces. *IEEE Transactions on Information Technology and Biomedicine*, Vol.15, pp.726-736, 2011. (Impact Factor: 3.850).
34. R. Vinjamuri, M. Sun, R. Scabassi, and Z.-H. Mao. Dimensionality reduction in control and coordination of human hand. *IEEE Transactions on Biomedical Engineering*, Vol.57, pp. 284-295, 2010. (Impact Factor: 4.538).
35. R. Vinjamuri, M. Sun, R. Scabassi, and Z. -H. Mao. Temporal postural synergies of hand in rapid grasping tasks. *IEEE Transactions on Information Technology in Biomedicine*, Vol.14, pp. 986-994, 2010. (Impact Factor: 3.850).
36. R. Vinjamuri, D. Crammond, D. Kondziolka, H.-N. Lee and Z.-H. Mao. Extraction of sources of tremor in hand movements of patients with movement disorders. *IEEE Transactions on Information Technology in Biomedicine*, Vol.13, pp. 49-56, 2009. (Impact Factor: 3.850).
37. P. Singh, R. Vinjamuri, X. Wang, and D. Reisner. Design and implementation of a fuzzy logic-based state-of-charge meter for Li-ion batteries used in portable defibrillators. *Journal of Power Sources* 162 (2), 829-836, 2006. (Impact Factor: 9.127).

○ **Conference Proceedings**

38. C. Myrick, R. Vinjamuri, and R. Anguluri, "Robust PCA-Based Dimensionality Reduction in Human Hand Coordination" 2025 IEEE Body Sensor Networks, LA, USA. 2025.
39. P. Olikkal, H. Ali, B. Pillai, J. Sukathorn and R. Vinjamuri, "A Hybrid EEG-EMG Framework for Humanoid Control using Deep Learning Transformers" 2024 *IEEE International Conference on Robotics and Biomimetics (ROBIO)*, Bangkok, Thailand, 2024.
40. B. Pillai, N. Siripala, K. Sai-Aroon, D. Sirvaraman, R. Vinjamuri, S. Chumnavej, and J. Sukathorn, "Enhancing Post-Stroke Upper Limb Rehabilitation Through Haptic Feedback in Virtual Reality-Based Gaming" 2024 *IEEE International Conference on Robotics and Biomimetics (ROBIO)*, Bangkok, Thailand, 2024.
41. K. Patel, F. Safavi, and R. Vinjamuri. Transformer-based emotion recognition with EEG. 46th Annual International Conference of the IEEE Engineering in Medicine and Biology Society, Orlando, FL, USA, 2024.

42. S. M. Kaviri, and R. Vinjamuri. "Decoding EEG for Spinal Cord Injury Rehabilitation: Integrating Source Localization with Residual CNN". IEEE HI-POCT 2024, Arizona, USA.
43. S. M. Kaviri, and R. Vinjamuri. "Integrating EEG Source Localization and ResNet CNN for Advanced Stroke Rehabilitation". IEEE HI-POCT 2024, Arizona, USA.
44. R. Gokhman, T. Sawdayi, R. Khan, A. Satyanarayana, R. Vinjamuri and S. P. Kadiyala, "Accurate Body Pose Matching for Individuals with Stroke using Siamese Networks," *2024 IEEE/ACM Conference on Connected Health: Applications, Systems and Engineering Technologies (CHASE)*, Wilmington, DE, USA, 2024, pp. 177-181, doi: 10.1109/CHASE60773.2024.00030.
45. S. Kadiyala, K. Chen, Z. Gui, P. Olikkal, A. Catlin, A. Satyanarayana, and R. Vinjamuri. "Novel Hand Gesture Classification based on Empirical Fourier Decomposition of sEMG Signals*," *2023 IEEE EMBS Special Topic Conference on Data Science and Engineering in Healthcare, Medicine and Biology*, Malta, 2023, pp. 53-54, doi: 10.1109/IEEECONF58974.2023.10404977.
46. P. Olikkal, D. Pei, B. K. Karri, A. Satyanarayana, N. M. Kakoty and R. Vinjamuri, "Learning Hand Gestures using Synergies in a Humanoid Robot," *2023 IEEE International Conference on Robotics and Biomimetics (ROBIO)*, Koh Samui, Thailand, 2023, pp. 1-6, doi: 10.1109/ROBIO58561.2023.10354698.
47. F. Safavi, K. Patel, and R. Vinjamuri "Towards Efficient Deep Learning Models for Facial Expression Recognition using Transformers". IEEE BSN 2023, Boston, USA.
48. M. Chanu, D. Pei, P. Olikkal, R. Vinjamuri, and N. M. Kakoty, "Electroencephalogram based Control of Prosthetic Hand using Optimizable Support Vector Machine". Proceedings of the 2023 6th International Conference on Advances in Robotics. 2023.
49. A. J. Kalita, M. Chanu, N. M. Kakoty, R. Vinjamuri, and S. Borah, "Performance Characteristics of EMG Controlled Prosthetic Hand". Proceedings of the 2023 6th International Conference on Advances in Robotics. 2023.
50. D. Pei, P. Olikkal, M.P. Chanu, N. Kakoty, A. Satyanarayana and R. Vinjamuri "Decoding Synergy-based Hand Grasps from Spectral Envelopes in Electroencephalography", IEEE EMBC, 2023. *Accepted*.
51. V. Penumalee[#] and R. Vinjamuri, "Development of a mobile app for objective assessment of prosthesis rejection rates in end-users", RESNA, 2022.
52. H. Mao, J. Widjaja, Y. Guo, J. Yin, and R. Vinjamuri, "Finding robust low dimensional features for sleep detection using EEG Data", 2nd International Conference on Data Science and Computer Application (ICDSCA), Dalian, China, 2022.
53. K. Jambhale, B. Rieland[‡], S. Mahajan[#], P. Narsay, N. Banerjee, A. Dutt, and R. Vinjamuri, "Selection of optimal physiological features for accurate detection of stress", 44th Annual International Conference of the IEEE Engineering in Medicine and Biology Society, Glasgow, Scotland, UK, 2022.
54. P. Olikkal, D. Pei, T. Adali, N. Banerjee, and R. Vinjamuri, "Musculoskeletal synergies in grasping hand", 44th Annual International Conference of the IEEE Engineering in Medicine and Biology Society, Glasgow, Scotland, UK, 2022.
55. D. Pei, P. Olikkal, T. Adali, and R. Vinjamuri, "Dynamical synergies in multidigit hand prehension", 44th Annual International Conference of the IEEE Engineering in Medicine and Biology Society, Glasgow, Scotland, UK, 2022.
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58. M. Burns, Z. Zavoda, R. Nataraj, K. Pochiraju, and R. Vinjamuri, "HERCULES: A three degree-of-freedom pneumatic upper limb exoskeleton for stroke rehabilitation", in 42nd Annual International Conference of the IEEE Engineering in Medicine and Biology Society, Montreal, Canada, 2020.

59. M. Burns, J. Stika[†], V. Patel, D. Pei, R. Nataraj and R. Vinjamuri, “Lateralization and Model Transference in a Bilateral Cursor Task”, in 42nd Annual International Conference of the IEEE Engineering in Medicine and Biology Society, Montreal, Canada, 2020.

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60. V. Patel, M. Burns, D. Pei, and R. Vinjamuri, “Decoding Synergy-Based Hand Movements Using Electroencephalography,” in 40th Annual International Conference of the IEEE Engineering in Medicine and Biology Society, Hawaii, USA, 2018.
61. V. Patel, M. Burns, I. Florescu, R. Chandramouli, and R. Vinjamuri. A novel biometric based on neural representations of synergistic hand grasps. IEEE Future Technologies Conference. Vancouver. Canada. 2017.
62. M. Burns, K. Van Orden[†], V. Patel, R. Vinjamuri. Towards a wearable hand exoskeleton with embedded synergies. 39th Annual International Conference of the IEEE Engineering in Medicine and Biology Society, Jeju Island, Korea, 2017.
63. V. Patel, M. Burns, M. Pourfar, A. Mogilner, D. Kondziolka, R. Vinjamuri. QAPD: An Integrated System to Quantify Symptoms of Parkinson’s Disease. 38th Annual International Conference of the IEEE Engineering in Medicine and Biology Society, Orlando, FL, USA, 2016.
64. M. Fifer, G. Milsap[†], E. Greenwald, D. McMullen, W. S. Anderson, N. V. Thakor, N. E. Crone, R. Vinjamuri. Design and Implementation of a Human ECoG Simulator for Testing Brain-Machine Interfaces. IEEE NER, San Diego, CA, 2013.
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67. R. Vinjamuri, A. Degenhart, J. L. Collinger, D. J. Crammond, E. Tyler-Kabara, D. J. Weber, M. Boninger, Z.-H. Mao, W. Wang. Towards synergy-based brain machine interfaces. Neuroscience, San Diego, CA, Nov. 17-21, 2010.
68. R. Vinjamuri, A. Degenhart, J. L. Collinger, G. P. Sudre, D. J. Crammond, E. Tyler-Kabara, D. J. Weber, W. Wang. Decoding hand posture based on human micro-electrocorticographic signals recorded during action observation. Neuroscience, Chicago, IL, Oct. 17-21, 2009.
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71. J. Collinger, W. Wang, A. Degenhart, R. Vinjamuri, G. Sudre, E. Tyler-Kabara, D. Weber Towards a direct brain interface for controlling assistive devices, in International Symposium on Quality-of-Life Technologies, Pittsburgh, PA, 2009.
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• **Books**

85. R. Vinjamuri (Ed.) Bridging the Gap Between Mind and Machine. Exploring the Future of Human-AI-Neurotechnology Integration. Springer NY 2026.
86. N. M. Kakoty, R. Goswami, and R. Vinjamuri. Introduction to Embedded Systems and Robotics. A Practical Guide. Springer NY 2024.
87. R. Vinjamuri (Ed.) Discovering the Frontiers of Human-Robot Interaction. Insights and Innovations in Communication, Collaboration and Control. Springer NY 2024.
88. R. Vinjamuri (Ed.) Human-Robot Interaction: Perspectives and Applications. InTech. Croatia. 2023.
89. J. H. Ortiz and R. Vinjamuri (Eds). Collaborative and Humanoid Robots. InTech, Croatia. 2021.

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90. R. Vinjamuri (Ed.) Advances in Neural Signal Processing. London, United Kingdom, IntechOpen, 2020 [Online]. Available from: <https://www.intechopen.com/books/8851> doi: 10.5772/intechopen.81424
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94. R. Vinjamuri (Ed.) Biomimetic Prosthetics. London, United Kingdom, IntechOpen, 2018 [Online]. Available from: <https://www.intechopen.com/books/5943> doi: 10.5772/66062

- **Book Chapters**

95. P. Olikkal, O. Mebaghanje, V. Janja, G. Mohrre, A. Ajendla, S. Sundharram, A. Kleinsmith, A. S. Clemmensen and R. Vinjamuri (2026). SIVAM: Synergy-based Intuitive Virtual and Augmented Therapy for Mental Health. In: Vinjamuri, R. (eds) Bridging the Gap between Mind and Machine. Springer, Cham.
96. P. Olikkal, S. Sundharram, S. Kaviri and R. Vinjamuri (2026). Reinforcement Learning-Driven Brain-Computer Interfaces for Neurorehabilitation: Trends, Methods and Challenges. In: Vinjamuri, R. (eds) Bridging the Gap between Mind and Machine. Springer, Cham.
97. A. Raina, A. Raina, P. Olikkal, V. Janeja, O. Mebaghanje, and R. Vinjamuri (2026). Soft Robotics for Neuroadaptive Assistance: Actuation, Sensing, and Brain-Computer Interface Integration. In: Vinjamuri, R. (eds) Bridging the Gap between Mind and Machine. Springer, Cham.
98. D. Pei and R. Vinjamuri, "Investigating the role of cortical rhythms in modulating kinematic synergies and exploring their potential for stroke rehabilitation", Editor(s): Ayman S. El-Baz, Jasjit S. Suri, In Advances in Neural Engineering, Brain-Computer Interfaces, Academic Press, 2025, Pages 253-263, ISBN 9780323954396, <https://doi.org/10.1016/B978-0-323-95439-6.00019-3>.
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100. H. Meyerson[#], P. Olikkal, D. Pei, and R. Vinjamuri, "Introductory Chapter: Human-Robot Interaction—Advances and Applications" in Human-Robot Interaction: Perspectives and Applications. InTech. Croatia. 2023.
101. D. Pei, and R. Vinjamuri, "Introductory Chapter: Methods and Applications of Neural Signal Processing," in Advances in Neural Signal Processing, R. Vinjamuri, Ed. Intech, 2020.
102. D. Pei, M. Burns, V. Patel, and R. Vinjamuri, "Neural Decoding of upper limb movements using electroencephalography," in Brain-Computer Interface Research: A State-of-the-Art Summary, C. Guger, Ed. Springer, 2020.
103. M. Burns, R. Vinjamuri, "Design of a soft glove-based robotic hand exoskeleton with embedded synergies," in Advances in Neuromotor Prostheses, R. Vinjamuri, Ed. Springer, 2020.
104. M. Burns, S. Madanagopalan, R. Mukundan[#], H. Myerson[#], and R. Vinjamuri, "Introductory Chapter: State of the art prosthesis," in Prosthesis, R. Vinjamuri, Ed. Intech, 2020.
105. M. Burns, M. Schumacher[‡], and R. Vinjamuri, "Introductory Chapter: Toward Near-Natural Assistive Devices," in Biomimetic Prosthetics, R. Vinjamuri, Ed. Intech, 2018.
106. R. Vinjamuri, W. Wang, M. Sun and Z.-H. Mao (2012). Application of linear and nonlinear dimensionality reduction methods, Principal component analysis, Parinya Sanguansat (Ed.), ISBN: 978-953-51-0195-6, InTech.

- **Works Submitted or In Preparation**

- **Articles**

107. K. Patel, F. Safavi and R. Vinjamuri, "Deep Learning for Emotion Recognition in EEG: A Transformer-based Approach", Submitted to IEEE ACCESS.
108. P. Olikkal, H. Ali, and R. Vinjamuri, "Hybrid EEG-EMG Transformer Model for Humanoid Robot Control in Center-Out Reaching Task", Under Review in IEEE TMRB.

109. S. Kaviri, and R. Vinjamuri, "PRSEPTrans-EEG: Source-Space sLORETA and Residual Transformers for Robust Motor Imagery and Execution EEG Decoding", Major Revision in Scientific Reports.
110. V. Venkannagari, S. Sharma, D. Parikh, J. Paun, F. Safavi, and R. Vinjamuri, "Rethinking the Paradigm for EEG Analysis: Subject-Specific Classification Using Adaptive Deep Learning Architectures", Submitted to IEEE Access

- **Conference Proceedings**

- **Books**

111. R. Vinjamuri (Ed.). Digital Frontiers in Mental Health: How Wearables, Robots, and AI are Transforming Care. Springer NY

- **Patents**

1. R. Vinjamuri (Lead), N. Banerjee, A. Dutt. Systems and methods of managing substance use disorder of a person based on detected neurophysiological activity data. (US Nonprovisional Patent Application No. 18/748,153). 2025.
2. R. Vinjamuri (Lead), L. Boot, C. Cheah. U.S. Provisional Patent Application (No. 63/855,686), entitled "Systems and Methods for Using Immersive Virtual/Augmented/Mixed Reality to Train the Alphabets of Hand Movements,"

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3. R. Vinjamuri (Lead), M. Burns, R. Rosa[†]. 3D-printed custom-fit instrumented glove with embedded sensors (US Provisional Patent Application No. 101995-049100). 2019.
4. R. Vinjamuri (Lead), M. Burns, V. Patel. Hand exoskeleton with embedded biomimetic control mechanisms (US Nonprovisional Patent Application No. 101995-046401). 2018.
5. R. Vinjamuri (Lead), V. Patel, R. Chandramouli. Cybersecurity authentication with hand synergies (US Provisional Patent Application No. 62/352,132). 2016.
6. R. Vinjamuri (Lead), W. Wang, Z.-H. Mao, D. Weber. Human machine interface based on task-specific temporal postural synergies (US Patent No. 13/246,190). 2015.

- **Keynote Talks, Invited Talks and Professional Presentations**

1. Kings College of Engineering, Trichy, India, March 2026
2. IIT DM Kanchipuram, Chennai, India, March 2026
3. NIT Puducherry, India, March 2026
4. NIT Trichy, India, GIAN – Workshop, Invited Talk, Feb 2026
5. Specially Invited Keynote Talk, AI-MERT Conference, Thailand, December 2025.
6. Special session and Talk, AICTE ATAL, Faculty Development Program, PTU, India, 2025.
7. Invited Talk, IEEE UMBC Student Chapter, Nov. 2025.
8. ARM Lab, Stanford University. Nov 5, 2025
9. Entrepreneurship for Social Impact in the Arts and Humanities, UMBC. Oct 8, 2025.
10. Maryland Psychiatric Research Center Seminar Series, MPRC, UM SOM, Oct 1, 2025.
11. UMBC COEIT Tech Transfer Workshop. My entrepreneurship journey at UMBC. Aug 28, 2025.

12. Summer Bridge Faculty Talks. Meyerhoff Scholars Program. UMBC. Brain-machine interfaces for human-robot collaboration. June 2025.
13. Invited Talk. Synergy-based brain-machine interfaces for human-robot interaction. ICTR ENRICHMENT SERIES. University of Maryland Baltimore, MD. June 2025.
14. Keynote Talk: Emerging Frontiers in Medical Technologies at 50th International Course on Internal Medicine. Organized by College of Internal Medicine of Mexico AC / Colegio de Medicina Interna de Mexico, A.C (CMIM), Business and Convention Bureau / Buro De Negocios Y Convenciones (BNC), held from Jun 18 - 21, 2025 at Mazatlan International Center, Mazatlán, Sinaloa, Mexico.
15. NSF REU Program Seminar/Invited Talk. Synergy-based brain-machine interfaces in human-robot interaction. Virginia Commonwealth University, Richmond, VA. June. 2025.
16. Keynote Talk: Synergy-based brain-machine interfaces for human-robot collaboration. Cognition Conferences International Conference on Robotics and Automation. May 2025, Osaka, Japan.
17. STARS Computing Corps at UMBC. Research Panel Day. April 2025. Brain Computer Interfaces and Exploring the Impact of AI on Student Learning.
18. Keynote Talk: Towards Decoding Deception: Exploring Neural Correlates of Concealed Information with Noninvasive EEG. 22nd Annual Neurotech Convention— Society for Brain Mapping & Therapeutics (SBMT) 2025, Los Angeles, CA.
19. Emerging frontiers in human-robot interaction. IHFC (TIH of IIT Delhi), 48th Cobo Talks. Feb. 2025.
20. Department Seminar. Synergy-based brain-machine interfaces in human-robot interaction. Department of Nuclear and Mechanical Engineering, Virginia Commonwealth University, Richmond, VA. Feb. 2025.
21. Institute wide Seminar. Emerging frontiers in health care. Manipal College of Health Professions, Jan 2025.
22. K-12 Outreach Program: Emerging frontiers in human-robot interaction. Amritha Vishwa Vidyapeetham, Bangalore, India. Jan 2025.
23. Institute wide Seminar: Synergy-based brain-machine interfaces in human-robot interaction. College of Engineering. Amritha Vishwa Vidyapeetham, Bangalore, India. Jan 2025.
24. Institute wide seminar. Synergy-based brain-machine interfaces for human-robot interaction. Asian Institute of Technology. Bangkok, Thailand. Dec. 2024.
25. Keynote Talk: Emerging frontiers in medical technologies. International Advanced Medical Robotics Symposium (iAMRS) 2024, Bangkok, Thailand.
26. Invited Session: Synergy-based brain-machine interfaces in human-robot interaction. Universidade do Porto, Porto, Portugal. November. 2024.
27. Keynote Address: Emerging Frontiers in Healthcare. XVII Academic Day, Angeles Hospital Medical Association, Ciudad Juarez, Mexico, October 2024.
28. Penuma: An integrated wearable system for management of substance use disorder. Manipal College of Health Professions, Department of Applied Psychology. Aug 2024.
29. Maryland Venture Fellowship Program – A Game-Changing Program for Young Entrepreneurs. bwtech@UMBC Research and Technology Park. MD. USA. May 2024.
30. Synergy-based brain-machine interfaces in human-robot interaction. Mahidol University, Thailand. May 2024.
31. Keynote Talk: Pneuma: An integrated wearable system for management of substance use disorder. 2nd Neurology Conference, Bangkok, Thailand, May 2024.
32. Synergy-based brain-machine interfaces in human-robot interaction. Indian Institute of Technology (IIT), Delhi, Dec 2023.
33. Keynote Talk: An integrated wearable system for management of substance use disorder. MBCC. IIT, Mandi, Dec 2023.
34. Synergy-based brain-machine interfaces in human-robot interaction. Institute for Development and Research in Banking Technologies (IDRBT), Hyderabad. Aug 2023.
35. Synergy-based brain-machine interfaces in human-robot interaction. Manipal College of Health Professions, Department of Physiotherapy. June 2023.

36. Synergy-based human-machine interfaces. Arm Institute Tech Talks. Pittsburgh. April 2023.
37. Technology Transfer in Health Sector in India vis-à-vis foreign countries. Panelist. School of Engineering, Tezpur University, Assam, India. Jan 2023.
38. Technology Transfer in Healthcare in the US. Symposium on Technology Transfer in Health Sector. Tezpur University, Assam, India. Jan 2023.
39. Technology Rollout from Academia. Certificate Program on Intellectual Property Rights for Enterprise Development. Tezpur University, Assam, India. Jan 2023.
40. BCI for upper-limb prostheses control. BCI & Neurotech Masterclass US Capital Region 1.0. Oct 2022.
41. On the roles of synergy-based human machine interfaces in human robot interaction. Workshop on Neurodesign in HRI. IEEE SMC. Oct 2022.
42. Brain-machine interfaces for upper limb motor control. Faculty Development Program, E&ICT, NIT Warangal, India. Sep 2022.
43. Prosthetics and neuroprosthetics. Summer Bridge Talk, UMBC. July 2022.
44. Synergy-based human-machine interfaces. Nalla Narasimha Reddy Group of Institutions, Hyderabad, India. June 23, 2022.
45. Synergy-based human machine interfaces. Workshop on Healthcare Robotics and Drone Applications. Indian Institute of Technology Mandi, India. May 27-29, 2022.
46. Synergy-based human machine interfaces. University of Delaware. ECE Department Seminar Series. May 2022.
47. Brain-Machine Interfaces. Tau Beta Pi (Engineering Honors Society). UMBC. April. 2022
48. Prosthetics and Neuroprosthetics. National Institute of Technology. Warangal. India. November 2021.
49. Synergy-based human-machine interfaces. Department of Electrical and Computer Engineering Seminar Series. Cosponsored by IEEE Student Chapter. SRM Andhra. Andhra Pradesh. India. May 2021.
50. Prosthetics and Neuroprosthetics. International Workshop on Recent Trends in Biomedical Instrumentation and Assistive Technology. National Institute of Technology. Tiruchirappalli. India. May 2021.
51. Biomimetic Algorithms for Prosthetics and Neuroprosthetics. Army Futures Command. US Army Research Laboratory. May 2021.
52. Synergy-based human-machine interfaces. ISC Seminar Series. Johns Hopkins University Applied Physics Laboratory. April 2021.
53. Synergy-based human-machine interfaces. Beyond the Books. A scientific talk series. D. Y. Patil University, Pune, India. April 2021.
54. Humanoid Robots. Implications and Realities of Industry 4.0 (IRI4.0), Sant Longowal Institute of Engineering and Technology (SLIET), Longowal, India. December 2020.
55. Sensorimotor control. ACM Student Chapter & IEEE Welcome Event. UMBC. October 2020.
56. Synergy-based human-machine interfaces. Institute of Engineers (TLC), Tiruchirappalli, India. July 2020.

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57. Synergy-based human-machine interfaces. University of Maryland Baltimore County. Department of Computer Science and Electrical Engineering Seminar Series. March 2020.
58. Synergy-based human-machine interfaces. New Jersey Institute of Technology. Department of Biomedical Engineering Seminar Series. Feb 2020.
59. Can biomimetic control algorithms enable near natural prosthetics? Theme: Emerging Advancement in the field of Biomedical Research. International Conference on Biomedical and Clinical Research. Philadelphia. PA. June 2019.
60. NSF "BRAIN" Roadmap Conference. Invited as Focus Group Lead for Soft Robotics and Noninvasive Brain Machine Interfaces. Cancun. Mexico. May 2019.
61. Presentation proposal to establish NSF sponsored IUCRC "BRAIN" Center, NSF Industry Advisory Board, University of Houston, Houston, 2018.

62. Decoding synergy-based hand movements using EEG. 40th Annual International Conference of the IEEE Engineering in Medicine and Biology Society, 2018.
63. Spotlight. Talk and Interview on Neural Behavioral Biometrics. IEEE Future Technologies Conference, Vancouver, Canada. 2017.
64. Towards a wearable hand exoskeleton with embedded synergies. 39th Annual International Conference of the IEEE Engineering in Medicine and Biology Society, Jeju Island, Korea, 2017.
65. Applications of Electroencephalography in Neuroprosthetics. Department of Neurology. Care Hospitals, Hyderabad, India. June 2015.
66. Advances in Biomedical Instrumentation – Prosthetics. Department of Biomedical Engineering. Indian Institute of Technology, Hyderabad, India. June 2015.
67. Synergy-based Brain Machine Interfaces. NYMedTalks Conference. New York Medical College, Valhalla. NY. USA. Nov. 2014.
68. Advances in Brain Machine Interfaces. Department of Biomedical Engineering. Indian Institute of Technology, Hyderabad, India. June 2014.
69. A synergy-based brain-machine interface for dexterous control of Prosthetic Hands. Biomedical Engineering Wallace H. Coulter Foundation Seminar Series. Florida International University, Miami, USA, Feb. 2011.

- **Media Activities**

Authored Articles

1. Robots are everywhere – improving how they communicate with people could advance human-robot collaboration. The Conversation. 2023.

Selected Press Coverage

1. The Hindu. 2026. Faculty development programme Shrimati Indira Gandhi College
2. Times of India. 2026. Shrimati Indira Gandhi College organizes faculty development programme.
3. NIT hosts workshop on human machine interfaces. 2026. Available at link: <https://www.thehindu.com/news/cities/Tiruchirapalli/nit-hosts-workshop-on-human-machine-interface/article70583490.ece>
4. Strange dance partners. 2025. Available at link: <https://umbc.edu/stories/strange-dance-partners/>
5. Researchers turn to classical Indian dance to improve robotic hand movement learning. 2025. Available at link: <https://interestingengineering.com/ai-robotics/classical-indian-dance-robotic-hand-training>
6. Indian dance mudras yield advanced synergies for robotic hand control. 2025. Available at link: https://www.spacedaily.com/reports/Indian_dance_mudras_yield_advanced_synergies_for_robotic_hand_control_999.html
7. What robots can learn from classical Indian dance? 2025. Available at link: <https://www.yahoo.com/news/articles/robots-learn-classical-indian-dance-170000874.html>
8. Classical Indian dance inspires new ways to teach robots how to use their hands. 2025. Available at link: <https://www.eurekalert.org/news-releases/1108572>
9. Strange dance partners. 2025. Available at link: <https://www.eurekalert.org/multimedia/1104873>
10. Could a robot dance partner help us de-stress? UMBC researchers explore the ‘algo-rhythmic’ possibilities. 2025. Available at link: <https://umbc.edu/stories/robot-dance-partner-research/>
11. Leading brain researchers and engineers converge on UMBC campus to advance innovative neurotechnologies. 2025. Available at link: <https://umbc.edu/stories/brain-researchers-at-umbc/>
12. RealLIST Innovators 2025: Meet 15 technologists driving Maryland’s innovations. Available at link: <https://technical.ly/professional-development/reallist-innovators-2025-maryland/>

13. Evolving BMI Tech can afford accessible neuroprosthetics. 2025. Available at link: <https://theinterview.world/evolving-bmi-tech-can-afford-accessible-neuroprosthetics/>
14. Prof. Ramana Vinjamuri's research team wins pitch contest; group developing wearable to detect and help manage stress. 2023. Available at link: <https://my3.my.umbc.edu/groups/csee/posts/133433>
15. The 2023 Maryland New Venture Fellowship just awarded \$10K to these startup teams. Technical.ly 2023. Available at link: <https://technical.ly/startups/2023-maryland-new-venture-fellowship-program/>
16. UMBC researchers advance neurotechnology in new consortium, 2022. Available at link: <https://research.umbc.edu/umbc-research-news/post/100348/>
17. Elon Musk's machine-meshed superhumans remain stuff of fantasy, say experts. WION 2019. Available at link: <https://www.wionews.com/world/elon-musks-machine-meshed-superhumans-remain-stuff-of-fantasy-say-experts-237062>
18. Interview with Ramana Kumar Vinjamuri at Future Technologies Conference, 2017. Available at link: <https://www.youtube.com/watch?v=A31X8qYKUzM>
19. Interview with Ramana Kumar Vinjamuri at EEWeb, 2012. Available at link: <https://www.eeweb.com/interview-with-ramana-kumar-vinjamuri/>

SERVICE TO THE DEPARTMENT AND UNIVERSITY

Service to the Department

2025 – Present	Chair, CS Graduate Admissions Committee
2024 – 2025	Member, CS Graduate Admissions Committee
2023 – Present	Member, CSEE Publicity Committee
2023 – Present	Member, CSEE Promotion and Tenure Committee (Chaired subcommittees)
2022 – 2024	Member, CS Faculty Search Committee
2022 – 2023	Member, EE Faculty Search Committee
2021 – 2022	Member, Committee on introducing a new “Bio-focused” track within CMSC/CMPE/ENEE
2020 – 2023	Member, CS Graduate Program Committee.
2020 – 2023	Member, CS Graduate Admissions Committee.
2020 – Present	Interviewer for Faculty Candidates, CSEE Department.
2019 – 2020	Member, Graduate Curriculum Committee, Biomedical Engg., Stevens Inst. of Technology
2019 – 2020	Member, Graduate Student Awards Committee, Biomedical Engg., Stevens Inst. of Technology
2019 – 2020	Member, Department Chair Search Committee, Biomedical Engg., Stevens Inst. of Technology

Service to University

In addition to the below mentioned services Dr. Vinjamuri has been instrumental in developing MoUs between UMBC and reputed international institutes such as Asian Institute of Technology, Thailand; Indian Institute of Technology, Hyderabad; Amrita Vishwa Vidyapeetham, Bangalore and is in the process of engaging other institutes. Also, working closely with the Center for Global Engagement, Dr. Vinjamuri has been actively participating in the outreach activities with consultancies (Educo, KC Overseas, AECC) worldwide that help recruit graduate and undergraduate students to UMBC.

2025 – Present	Member, START FY25 award selection committee
2025 – Present	Member, Global Engagement Advisory Council
2024 – Present	Member, Workgroup to Establish Science and Technology Best Practices and Innovation Network
2024 – Present	Director, UMB/UMBC Institute for Clinical and Translational Research (ICTR) & AI Cyber Core
2024 – Present	Center Director, NSF BRAIN IUCRC

2024	Plenary Session Chair, COEIT Research Day, 2024
2024	Member, Search Committee for Grant Writer for School of Engineering
2022 – 2024	Department Ambassador, Maryland Charity Campaign
2022	Speaker, UMBC CNMS and COEIT NSF CAREER Workshop
2022	Interviewer for University wide Human Health Faculty Candidates Search.
2021	Speaker, UMBC CNMS and COEIT NSF CAREER Workshop
2021	Panelist, Socially Responsible Research Panel (Moderator: Erin Lavik).
2018 – 2020	Member, Institutional Review Board, Stevens Institute of Technology
2018 – 2020	Member, Committee on Committees, Stevens Institute of Technology
2019 – 2020	Member, Research Enterprise and Technology Commercialization, Stevens Inst. of Technology
2019 – 2020	Member, MS Program Task Force, Stevens Institute of Technology

PROFESSIONAL SERVICE AND LEADERSHIP ACTIVITIES

Leadership

2025 – Present	Member, International Affairs Subcommittee, BMES
2024	General Chair, BMES Annual Meeting, Baltimore, MD, USA
2024 – Present	Member, Industry Advisory Group, IEEE Signal Processing Society Education Board
2023	General Chair, IEEE Brain Discovery and Neurotechnology Workshop. General Chairs: Ramana Vinjamuri and Tulay Adali. Nov 9-10, 2023, Washington, DC. This is a satellite workshop of Society for Neuroscience Meeting.

Journal Editorial Boards, Guest Editing and Conferences

2025	Associate Editor, Frontiers in Neurology Neuroadaptive BCI-driven robotic hand rehab in stroke
2025	Associate Editor, IEEE EMBC 2025, Copenhagen, Denmark.
2024 – Present	Associate Editor, Frontiers in Neuroscience Neuroscience methods and techniques
2024 – Present	Associate Editor, Frontiers in Neuroinformatics
2024 – Present	Associate Editor, Frontiers in Neurorobotics
2024 – Present	Associate Editor, Frontiers in Robotics and AI Human-Robot Interaction
2024	Session Chair, Humanoid Robots, IEEE ROBIO 2024, Bangkok, Thailand.
2024	Member, Program Committee, The 6 th IEEE/IFTOMM International Conference on Reconfigurable Mechanisms and Robots (ReMAR) 2024
2023	Session Chair, Special Session, Non-invasive Brain Stimulation, MBCC, IIT Mandi.
2023	Session Chair, EEG/MEG Signal Processing for Brain Computer Interfaces, MBCC, IIT Mandi.
2023	Session Chair, Human-Robot Interaction, IEEE ROBIO, Koh Samui, Thailand
2023	General Chair, IEEE Brain Discovery and Neurotechnology Workshop, DC, USA.
2023	Session Chair, Sharing Data across Continents, NSF-TIH Meeting, Baltimore, MD
2023 – Present	Special Topics Editor, Frontiers in Robotics and AI
2019 – Present	Associate Editor, <i>nature</i> Scientific Data
2019 – Present	Associate Editor, IEEE ACCESS
2018	Session Chair, Neural Signal Processing, IEEE EMBC
2018	Special Topics Editor, Frontiers in Bioengineering and Biotechnology
2017 – Present	Associate Editor, Frontiers in Bioengineering and Biotechnology
2017	Special Topics Editor, Frontiers in Bioengineering and Biotechnology
2017	Session Chair, Motor Neuroprosthesis, IEEE EMBC
2013 – Present	Associate Editor, Medical and Biological Engineering and Computing, Springer

2013 – Present Reviewer for IEEE Access, IEEE Transactions in Biomedical Engineering, Journal of Neural Engineering, IEEE Transactions on Neural Networks, IEEE Transactions on Intelligent Transport Systems, IEEE EMBC, IEEE EMBS BHI, Sensors, International Journal of Radio Frequency Identification Technology and Applications, International Journal of Nano Medicine, Journal of Mechanics in Medicine and Biology, Journal of Medical & Biological Engineering & Computing, Frontiers in Systems Neuroscience, and Brain Structure and Function.

Panels and Study Sections

- Panelist for National Institute on Disability, Independent Living and Rehabilitation Research (NIDILRR) for–(i) Field Initiated Projects (ii) Mary E. Switzer Merit Fellowships, (iii) SBIR Phases I and II and (iv) Advanced Rehabilitation Research and Training.
- Panelist for Department of Defense (DoD), Congressionally Directed Medical Research Programs (CDMRP) for (i) Neuroprosthetics (NP) (ii) Neurostimulation Technologies (NST) peer review panel of the Spinal Cord Injury Research Program (SCIRP) (iii) Military Operational Medicine (MOM) peer review panel of the Joint Warfighter Medical Research Program (JWMRP) and (iv) Medical Simulation and Information Sciences (MSIS) (v) Orthotics and Prosthetics Outcomes Research Program (OPORP).
- Panelist for NSF Future of Work at the Human Technology Frontier (FW-HTF).
- Panelist for NSF Computer and Information Science and Engineering (CISE) Cyber Human Systems (CHS) CAREER
- Panelist for NSF M3X CAREER
- Panelist for NSF EPSCoR FEC Panel
- Panelist for NSF Emerging Frontiers in Research Innovation (EFRI) Brain-inspired Dynamics for Engineering Energy-Efficient Circuits and Artificial Intelligence (BRAID).
- Panelist for the Swiss National Science Foundation.
- Panelist for The Netherlands Organization for Health Research and Development (ZonMw) program for Translational Research.

Other Services

2010 – 2012 Chapter Chair for IEEE Signal Processing Society, Pittsburgh Chapter

2017 Panel Judge, Artificial Intelligence – Human Machine Interfaces, 25th Annual Beacon Conference, Bergen Community College, Paramus, NJ.

Workshops

2026 4th Workshop on NeuroDesign in Human-Robot Interaction: The making of engaging HRI technology your brain can't resist. Workshop is part of IEEE ICRA 2026. Vienna, Austria.

- Organized by Ker-Jiun Wang, Ramana Vinjamuri, Maryam Alimardani, Zhi-Hong Mao, Midori Sugaya, Jun Ueda.
- 2025 5th Annual BCI Workshop on Wellness and Entertainment. 2025. Organized by Tulay Adali, Rajasekhar Anguluri, Sofie Clemmensen, Charissa Cheah, Andrea Kleinsmith, Dong Li, Christine Mallinson, Susmit Tripathi, Adam Culbreth, and Ramana Vinjamuri. Industry sponsors: Cognixon and CyberGlove Systems LLC. Opening remarks by Dr. Jeanne van Breisen and Dr. Mohamed Younis.
- 2025 3rd Workshop on NeuroDesign in Human-Robot Interaction: The making of engaging HRI technology your brain can't resist. Workshop is part of IEEE RO-MAN 2025. Eindhoven, the Netherlands. Organized by Ker-Jiun Wang, Zhi-Hong Mao, Midori Sugaya, Ramana Vinjamuri, Maryam Alimardani.
- 2025 NeuroWearX for Smart Aging: Developing Next Generation Wearable AgeTech for Our Parents, Elderly Loved Ones, and Our Future Selves. 47th Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC) to be held in Copenhagen, Denmark between July 14-17, 2025.
- 2025 3rd Workshop on NeuroDesign in Human-Robot Interaction: The making of engaging HRI technology your brain can't resist. Workshop is part of 2025 34th IEEE International Conference on Robot and Human Interactive Communication (ROMAN), Eindhoven University of Technology, Eindhoven, The Netherlands. Organized by Ker-Jiun Wang, Zhi-Hong Mao, Midori Sugaya, Ramana Vinjamuri, Maryam Alimardani.
- 2024 4th Brain Computer Interface Workshop for Multimodal Imaging. Organized by Rajasekhar Anguluri, Tulay Adali and Ramana Vinjamuri. Sep 27, 2024. UMBC. Industry Sponsors: Biopac Systems LLC and Seenel Imaging.
- 2024 NeuroWearX Workshop: Fusing Human, AI, and Machine by Wearable Neurotechnology for Equity and Accessibility for Well-Health. Workshop is part of IEEE EMBC 2024. Boston. MIT Media Lab. Organized by Ker-Jiun Wang, Ramana Vinjamuri, Zhi-Hong Mao, Maryam Alimardani and Midori Sugaya.
- 2024 2nd Workshop on NeuroDesign in Human-Robot Interaction: The making of engaging HRI technology your brain can't resist. Workshop is part of IEEE ICRA, 2024. Yokohoma. Japan. Organized by Ker-Jiun Wang, Zhi-Hong Mao, Midori Sugaya, Ramana Vinjamuri, Maryam Alimardani.
- 2023 The opportunities and Challenges of ChatGPT in Brain-Machine Interface. Workshop is part of IEEE BHI 2023. Pittsburgh. Organized by Ker-Jiun Wang, Ramana Vinjamuri, Zhi-Hong Mao, Maryam Alimardani and Midori Sugaya.
- 2023 NeuroWearX Workshop, Amplifying Digital Healthcare with Neurodesign in Wearable Robotics. Workshop is part of IEEE BSN 2023. Boston. MIT Media Lab. Organized by Ker-Jiun Wang, Ramana Vinjamuri, Zhi-Hong Mao, Maryam Alimardani and Midori Sugaya.
- 2023 3rd Brain Computer Interface Workshop for Mobile EEG. Organized by Ramana Vinjamuri, Roberto Yus and Karen Chen. June 7, 2023. UMBC.
- 2022 NSF IUCRC BRAIN Center Planning Meeting Workshop. Organized by Ramana Vinjamuri. Co-organized by Tulay Adali, Nilanjan Banerjee, Fowsen Choa, Don Engel, and Seung-Jun Kim. Sep 9, 2022. UMBC.

- 2022 1st Wearables for Health and Wellbeing Workshop. Organized by Ramana Vinjamuri and Delsys. Scheduled. UMBC.
- 2019 2nd Brain Computer Interface Workshop. Organized by Ramana Vinjamuri and mBrainTrain. Oct. 28, 2019. Graduate students from Vinjamuri lab coordinated logistics. Stevens Institute of Technology.
- 2018 1st Brain Computer Interface Workshop for Control, Assessment and Rehabilitation at Stevens Institute of Technology. Organized by Ramana Vinjamuri and Christoph Guger. Oct. 30, 2018. Graduate students from Vinjamuri lab coordinated logistics. Stevens Institute of Technology.

TEACHING

Teaching at UMBC

Teaching at UMBC has been a challenging but fulfilling experience for me. It was challenging because of the remote and hybrid teaching environment yet fulfilling as students embraced my teaching and reciprocated enthusiastically. I have taught at undergraduate and graduate levels. The integration of the didactic component of the lectures with practical research experience resonates well with students and is reflected in their very positive evaluations of the courses. Despite the pandemic, students have reassured and rewarded my efforts with an overall rating of 4.95/5.

Fall 2020	Computer Architecture (Undergrad Core), Overall evaluation 4.94/5
Spring 2021	Intro. to Brain Computer Interfaces (Grad/Undergrad Special Topics), Overall evaluation, 4.96/5
Fall 2021	Computer Architecture (Undergraduate Core), Overall evaluation 4.96/5
Spring 2022	Intro. to Brain Computer Interfaces (Grad/Undergrad Special Topics), Overall evaluation, 5/5
Fall 2022	Computer Architecture (Undergraduate Core), Overall evaluation 4.91/5
Spring 2023	Intro. to Brain Computer Interfaces (Grad/Undergrad Special Topics), Overall evaluation, 4.9/5
Fall 2023	Computer Architecture (Undergraduate Core), Overall evaluation 4.97/5
Spring 2024	Intro. to Brain Computer Interfaces (Grad/Undergrad Special Topics), Overall evaluation, 5/5
Spring 2024	Computer Architecture (Undergraduate Core), Overall evaluation 5/5
Fall 2024	Computer Architecture (Undergraduate Core), Overall evaluation 5/5
Spring 2025	Intro. to Brain Computer Interfaces (Grad/Undergrad Special Topics), Overall evaluation, 4.94/5
Spring 2025	Computer Architecture (Undergraduate Core), Overall evaluation 4.86/5
Fall 2025	Computer Architecture (Undergraduate Core), Overall evaluation 5/5

Teaching at Stevens Institute of Technology

Teaching at Stevens has been a rewarding and fulfilling experience for me. I have been recognized by the Provost and Vice-Provost for teaching excellence when students rated me highly in their evaluations. Over the course of my teaching years, I have received an average evaluation of 4.82/5. In 2018, I was awarded the Harvey N Davis Distinguished Award for teaching excellence. Also, in 2018, as part of the Dean's initiative to improve labs across the school, I was awarded \$30,000 to improve the hands-on experiences in a core undergraduate course.

2014 – 2020	Introduction to Biomedical Instrumentation (Undergrad Core), Overall evaluation 4.83/5
2016 – 2020	Introduction to Brain Machine Interfaces (Grad/ Undergrad), Overall evaluation, 4.73/5
2013 – 2020	Introduction Biomedical Engineering (Undergraduate Core), group taught course
2018 – 2020	Stevens Pinnacle Scholars Seminar Course (Undergraduate Seminar)
2016 – 2017	Research Seminar in Biomedical Engineering (Undergraduate Core), group taught course