

Ehsan T. Esfahani Ph.D

CURRENT POSITION

Associate Professor,
Department of Mechanical and Aerospace Eng.
University at Buffalo

245 Bell Hall, Buffalo, NY 14260
Phone: (716) 645-2517
Email: ehsanesf@buffalo.edu
www.buffalo.edu/~ehsanesf

RESEARCH INTEREST

Human-Robot Interaction, Human-AI Teaming, Human-in-the loop system/Learning, Neuroergonomics, Medical Robotic, Bio-Mechatronics, Cognitive Engineering.

EDUCATION

Doctor of Philosophy in Mechanical Engineering, University of California, Riverside, CA	2012
Master of Science in Electrical Engineering, University of California, Riverside, CA	2012
Master of Science in Mechanical Engineering, University of Toledo, Toledo, OH	2007
Bachelor of Science in Mechanical Engineering, Isfahan University of Technology, Iran	2004

PROFESSIONAL EXPERIENCES

University at Buffalo, Buffalo NY <i>Associate Professor</i> , Department of Mechanical and Aerospace Engineering. <i>Core Faculty Member</i> , Computational Data Science and Engineering (CDSE) Program. <i>Faculty Member</i> , UB Center for Cognitive Science.	8/2018–Now
University at Buffalo, Buffalo NY <i>Assistant Professor</i> , Department of Mechanical and Aerospace Engineering.	8/2012–8/2018
Roswell Park Cancer Institute, Buffalo NY <i>Adjunct Assistant Professor</i> , Department of Oncology and Robotic Surgery.	3/2013–2/2016
University of California, Riverside CA <i>Research Assistant</i> , Department of Mechanical Engineering.	9/2008–7/2012
General Motors R&D <i>Project Engineer</i> , Electrical and Control Integration Lab.	1/2008–9/2008
University of Toledo, Toledo OH <i>Research Assistant</i> , Dynamic and Smart Systems Lab.	1/2006–12/2007
Isfahan Science and Technology Town, Isfahan Iran <i>Robotic Engineer</i> , DRobotics Center.	9/2004–1/2006

ACHIEVEMENTS and AWARDS

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| • 1st place Best Innovation in HRI Award in NeuroDesign Expo & Competition, IEEE ICRA. | 2024 |
| • Best Paper Award, IEEE Conference on Multi-Robot and Multi-Agent Systems, | 2021 |
| • SEAS Senior Teacher of the Year Award, University at Buffalo, | 2020 |
| • American Power Public Associations DEED Scholarship, | 2012 |
| • Dissertation Year Fellowship Award, UC Riverside, | 2011-2012 |
| • Lung-Wen Tsai Memorial Scholarship in Mechanical Design, UC Riverside, | 2010 |
| • Graduate Dean Fellowship, UC Riverside, | 2008-2010 |
| • NSF Travel Fellowship, | 2007 |
| • 2nd Place in Humanoid Robot Technical Challenge at RoboCup Competition, Lisbon, Portugal, | 2004 |

GRANT SUPPORT

Federal FUNDED PROJECTS

- **Office of Naval Research**, *Title*: GRAPPLE: Generalizable Robust and Activity Planning Enabled by Physics Based Abstraction, Simulation and Learning Environments. *Award*: \$700,000. *Duration*: 11/23 – 3/27. *Role*: CoPI, PI: S. Chowdhury, Other CoPIs: K. Dantu, C. Wang.
- **National Science Foundation, AI & Society Program**, *Title*: AI-DCL:Cognitive-Behavior Model to Predict Human Reaction to Swarm AI Non-Compliance. *Award*: \$298,734. *Duration*: 09/19–12/22. *Role*: PI, CoPI: S. Chowdhury.
- **Department of Defense Advanced Research Projects Agency, OFFensive Swarm-Enabled Tactics Program–Sprint 4**, *Title*: Swarm Tactics Design via ENHANCE: Evolving Neural Architectures with Human Augmented Novelty for Complex Environments. *Award*: \$499,382. *Duration*: 09/19–09/20. *Role*: CoPI, PI: S. Chowdhury, Other CoPIs: K. Dantu, D. Doermann.
- **National Science Foundation, Smart and Connected Health**, *Title*: Cognitive Haptic Based Rehabilitation System for Patient-Centric Home. *Award*: \$271,093. *Duration*: 09/15–08/19. *Role*: PI.
- **NSF, Center for eDesign**, *Title*: Human-Centered Adaptation for Accelerated Work Force Training. *Award*: \$30,000. *Duration*: 02/16–01/17. *Role*: Co-PI, PI: K. Dantu.

STATE/INDUSTRY FUNDED PROJECTS

- **NY Center of Excellence in Material Informatics**, *Title*: Intelligent Robotic Solutions for Soft-Tissue Processing in Advanced Biomanufacturing. *Award*: \$50,000. *Duration*: 07/26–06/27. *Role*: PI.
- **SUNY-IBM AI Research Alliance**, *Title*: HHTPulse: Expressive Foundation Models for Physiological Time-Series via Stochastic Intrinsic Mode Representations. *Award*: \$100,000. *Duration*: 02/26–07/27. *Role*: PI, coPI: Souma Chowdhury, Maxim Bichuch.
- **Applied Medical Coating**, *Title*: Autonomous Robotic Solution for Coating Medical Instruments. *Award*: \$50,976. *Duration*: 09/25–12/26. *Role*: PI.
- **Yancey’s Fancy Cheese**, *Title*: Robotic Solution for automated packaging and Palletizing. *Award*: \$40,578. *Duration*: 05/25–12/25. *Role*: PI.
- **Fresenius Kabi USA**, *Title*: Automation Feasibility Study with Autonomous Mobile Robots (AMR). *Award*: \$15,400. *Duration*: 08/24–12/24. *Role*: PI.
- **NY Center of Excellence in Material Informatics**, *Title*: Soft robotic gripper for calf lung massaging to enhance surfactant extraction.. *Award*: \$50,000. *Duration*: 07/24–06/25. *Role*: PI.
- **NY Center of Excellence in Material Informatics**, *Title*: Self-powered Tactile Sensor-integrated Robotics System for Smart Agriculture.. *Award*: \$50,000. *Duration*: 07/24–06/25. *Role*: coPI, PI: Jun Liu.
- **OnyBiotech Inc.**, *Title*: Automated Robotic Solution for Calf Lung Surfactant Extraction. *Award*: \$44,394. *Duration*: 06/23 – 06/24. *Role*: PI.
- **Empire State Development Fund**, *Title*: Adjustable stiffness robotic gripper for safe human-robot collaboration. *Award*: \$55,433. *Duration*: 08/19–12/20. *Role*: PI.
- **NVIDIA Corporation, GPU Hardware Donation**, *Title*: Deep Learning for Adaptive Human-Robot Interaction using Brain Computer Interfaces. *Award*: \$3,000. *Duration*: 10/18. *Role*: PI.
- **Roswell Park Alliance**, *Title*: Cognitive Skill Assessment during Robotic-Assisted Surgery. *Award*: \$14,791. *Duration*: 05/14–12/14. *Role*: PI.

- **American Power Public Association, DEED – Demonstration of Energy & Efficiency Developments Program**, *Title*: Wireless Sensor Network for Real-time Condition Monitoring of Industrial Motors. *Award*: \$5,000. *Duration*: 01/12–02/13. *Role*: PI.

INTERNALLY FUNDED PROJECTS

- **The Stephen Still Institute for Sustainable Transportation and Logistics**, *Title*: Data-driven Modeling of Human-Pilot Behavior for Unmanned Aerial Systems with Extension to Urban Air Mobility Systems. *Award*: \$55,556. *Duration*: 01/22–09/23. *Role*: CoPI, PI: S. Chowdhury.
- **Buffalo Blue Sky**, *Title*: Human-Swarm Interaction in Complex Environment. *Award*: \$15,000. *Duration*: 06/19–09/19. *Role*: PI, Other PIs: S. Chowdhury, K. Dantu.
- **UB SMART Center of Excellence**, *Title*: Noise Regulation in Drones for Co-Robotic Environments: Investigating Impact on Human Hearing and Cognition. *Award*: \$25,000. *Duration*: 06/19–06/20. *Role*: Co-PI, PI: S. Chowdhury, CoPI: M. Nough, A. Sheppard.
- **National Science Foundation, Regional Innovation Corps**, *Title*: Robotic Gripper with Adjustable Stiffness. *Award*: \$3,000. *Duration*: 01/19–04/19. *Role*: PI.
- **Institute for Person-Centered Care**, *Title*: Comprehensive In-home Monitoring for Post Stroke Mobility. *Award*: \$6,998. *Duration*: 06/15–05/16. *Role*: PI.

PUBLICATIONS (Bold names correspond to student co-authors)

BOOK CHAPTERS

- B04 **Manjunata, H.**, and **Esfahani, ET.**, “Application of Reinforcement and Deep Learning Techniques in Brain Machine Interfaces.” *Advances in Motor Neuroprosthesis*, Ed. by R.Vinjamuri, Pp.1–14, Springer 2020, DOI: [10.1007/978-3-030-38740-2_1](https://doi.org/10.1007/978-3-030-38740-2_1).
- B03 **Esfahani, ET.**, **McBride, DW.**, **Shafiei, SB.** and **Obenaus, A.**, “A Real-Time Analysis of Traumatic Brain Injury from T2 Weighted Magnetic Resonance Images Using a Symmetry-based Algorithm.” *Video Bioinformatics, Computational Biology*, Vol.22, Ed. by Bhanu, B., Talbot., P., Pp.99–117, Springer 2015, DOI: [10.1007/978-3-319-23724-4_5](https://doi.org/10.1007/978-3-319-23724-4_5).
- B02 Elahinia, MH., **Esfahani, ET.** and Wang, S., “Control of SMA systems: Review of the State of the Art.” *Shape Memory Alloys: Manufacture, Properties and Applications*. Ed. by Chen, RC., Pp.49–68, Nova Science Publishers, 2010, ISBN: [978-1-60741-789-7](https://www.isbn-international.org/product/978-1-60741-789-7).
- B01 **Esfahani, ET.**, “Dynamic Modeling with Dymola.” *A Key to Fundamental Software Packages in Mechanical Engineering*. Ed. Forouzan, M., Pp.259–274, Kelid-Amouzesh Press, Iran 2005, ISBN: 964-8617-45-7.

EDITORIAL

- E04 Allen, JK., **Esfahani, ET.**, Gupta, SK., Gurumoorthy, B., He, Liu, Y., Michopoulos, J., Panchal, JH., Purwar, A., Warmefjord, K. “Challenges and Opportunities in Computing Research to Enable Next Generation Engineering Applications”, *ASME Journal of Computing and Information Science in Engineering*. Sep 2023, DOI: [10.1115/1.4063437](https://doi.org/10.1115/1.4063437)
- E03 Barresi, G., Nam, CS., **Esfahani, ET.**, and Balconi, M. “Editorial: Neuroergonomics in Human-Robot Interaction”, *Frontiers in Neurorobotics*.. Aug 2022, DOI: [10.3389/fnbot.2022.1006103](https://doi.org/10.3389/fnbot.2022.1006103)
- E02 **Esfahani, ET.**, He, B., Chu, C.H., Liu, Y., Rai, R., and Ameta, G. “Symbiotic Human-AI Partnership for Next Generation Factories”, *ASME Journal of Computing and Information Science in Engineering*. Vol. 22, No. 5., 2022, DOI: [10.1016/j.cad.2014.05.011](https://doi.org/10.1016/j.cad.2014.05.011)
- E01 **Esfahani, ET.** and Horwath, I. “Application of Brain Computer Interfaces in CAD/E Systems”, *Computer-Aided Design*. Vol. 54, Pp. 1–2, 2014, DOI: [10.1016/j.cad.2014.05.011](https://doi.org/10.1016/j.cad.2014.05.011)

PEER-REVIEWED JOURNAL MANUSCRIPTS

- J32 Meshram, P.W., Adhivarahan, C., Esfahani, E.T., Chowdhury, S., Wang, C., and Dantu, K., “CLEAR: A SemanticGeometric Terrain Abstraction for Large-Scale Unstructured Environments”, *IEEE Robotics and Automation Letter*, (Accepted Aug 2026).
- J31 **Dalland, K.**, Dantu, K., Chowdhury, S., and Esfahani, E.T., “Adaptive Hiking-Time Prediction Through State-Dependent Energy Regulation”, *IEEE Transactions on Biomedical Engineering.*, DOI: [10.1109/TBME.2026.3720250](https://doi.org/10.1109/TBME.2026.3720250).
- J30 KrishnaKumar, P., Witter, J., Collins, L., Jagadeswara VP., Ghasemi, P., Esfahani, E.T., Dantu, K., and Chowdhury, S. “Efficient Planning for Scalable and Load-Balanced Area Coverage by Multiple Unmanned Aerial Vehicles.” *ASEM Journal of Computing and Information Science in Engineering*, Vol. 26, No. 9: 091002, Sep. 2026. DOI: [10.1115/1.4071466](https://doi.org/10.1115/1.4071466).
- J29 Gautham, V., Panpalia, A., **Manouchehri, H.**, **Gabani, K.**, Anil, V., Yerneni, S., Thakar, R., Nayyar, A., Payare, M. A., Jorgensen, E., Yang, R., Esfahani, E. T., and Liu, J., “Slip-actuated bionic tactile sensing system with dynamic DC generator integrated E-textile for dexterous robotic manipulation.” *Nature Communications*, Vol. 16, 7005, July 2025. DOI: [10.1038/s41467-025-61843-6](https://doi.org/10.1038/s41467-025-61843-6).
- J28 **Distefano, J.**, **Manjunatha, H.**, **Dalland, K.**, and Esfahani, E. T., “Gaze-guided contrastive unsupervised representations for reinforcement learning.” *Neural Computing and Applications*, Vol. 37, Pp. 23381–23393, Aug. 2025. DOI: [10.1007/s00521-025-11526-6](https://doi.org/10.1007/s00521-025-11526-6).
- J27 **Manjunatha, H.**, **Memar, A. H.**, and Esfahani, E. T., “Estimating motor control difficulty in human–robot fine co-manipulation tasks using brain activities.” *ASME Journal of Computing and Information Science in Engineering*, Vol. 25, Pp. 051004-1(9 pages), May 2025. DOI: [10.1115/1.4068083](https://doi.org/10.1115/1.4068083).
- J26 **Distefano, J.**, Chowdhury, S., and Esfahani, E. T., “Exploring human–swarm interaction dynamics in cyber–physical systems: A physiological approach.” *Journal of Integrated Design and Process Science*, Vol. 27, No. 3–4, Pp. 200–210, Nov. 2024. DOI: [10.1177/10920617241292155](https://doi.org/10.1177/10920617241292155).
- J25 **Jujjavarapu, S.**, **Manjunatha, H.**, and Esfahani, E. T., “A variable stiffness end-of-arm tooling mechanism to enhance dynamic task capabilities of robotic manipulators.” *Journal of Mechanism and Robotics*, Vol. 15, No. 6, Pp. 061003(9 pages), Dec. 2023. DOI: [10.1115/1.4056235](https://doi.org/10.1115/1.4056235).
- J24 **Bhargav, S. C.**, **Manjunatha, H.**, and Esfahani, E. T., “Selective eye-gaze augmentation to enhance imitation learning in Atari games.” *Neural Computing and Applications*, Vol. 35, Pp. 23401–10, 2023. DOI: [10.1007/s00521-021-06367-y](https://doi.org/10.1007/s00521-021-06367-y).
- J23 **Manjunatha, H.**, **Jujjavarapu, S.**, and Esfahani, E. T., “Transfer learning of motor difficulty classification in physical human–robot interaction using electromyography.” *ASME Journal of Computing and Information Science in Engineering*, Vol. 22, Pp. 050908-1–8, Oct. 2022. DOI: [10.1115/1.4054594](https://doi.org/10.1115/1.4054594).
- J22 **Manjunatha, H.**, Pareek, S., **Jujjavarapu, S.**, **Ghobadi, M.**, Kesavadas, T., and Esfahani, E. T., “Upper limb home-based robotic rehabilitation during COVID-19 outbreak.” *Frontiers in Robotics and AI*, Vol. 8, Pp. 75.1–14, 2021. DOI: [10.3389/frobt.2021.612834](https://doi.org/10.3389/frobt.2021.612834).
- J21 **Baghdadi, A.**, Cavuoto, L. A., Jones-Farmer, A., Rigdon, S. E., Esfahani, E. T., and Megahed, F. M., “Monitoring worker fatigue using wearable devices: A case study to detect changes in gait parameters.” *Journal of Quality Technology*, Vol. 53, No. 1, Pp. 47–71, 2021. DOI: [10.1080/00224065.2019.1640097](https://doi.org/10.1080/00224065.2019.1640097).
- J20 **Manjunatha, H.**, Pareek, S., **Memar, A. H.**, Kesavadas, T., and Esfahani, E. T., “Effect of haptic assistance strategy on mental engagement in fine motor tasks.” *Journal of Medical Robotic Research*, Vol. 5, No. 1n02, Pp. 2041004, 2020. DOI: [10.1142/S2424905X20410044](https://doi.org/10.1142/S2424905X20410044).
- J19 **Memar, A. H.** and Esfahani, E. T., “Objective assessment of human workload in physical human–robot cooperation using brain monitoring.” *ACM Transactions on Human–Robot Interaction*, Vol. 9, No. 2, Pp. 13:1–13:21, 2020. DOI: [10.1145/3368854](https://doi.org/10.1145/3368854).

- J18 **Memar, A. H.** and Esfahani, E. T., “A robot gripper with variable stiffness actuation for enhancing collision safety.” *IEEE Transactions on Industrial Electronics*, Vol. 67, No. 8, Pp. 6607–16, 2020. DOI: [10.1109/TIE.2019.2938475](https://doi.org/10.1109/TIE.2019.2938475).
- J17 Younespour, M., Atighehchian, A., Kianfar, K., and Esfahani, E. T., “Using mixed integer programming and constraint programming for operating rooms scheduling with modified block strategy.” *Operations Research for Health Care*, Vol. 23, Pp. 100220, 2019. DOI: [10.1016/j.orhc.2019.100220](https://doi.org/10.1016/j.orhc.2019.100220).
- J16 Pareek, S., **Manjunatha, H.**, Esfahani, E. T., and Kesavadas, T., “MyoTrack: Real-time estimation of subject participation in robotic rehabilitation using sEMG and IMU.” *IEEE Access*, Vol. 7, Pp. 76030–76041, 2019. DOI: [10.1109/ACCESS.2019.2922325](https://doi.org/10.1109/ACCESS.2019.2922325).
- J15 **Jujjavarapu, S.**, **Memar, A. H.**, Karami, M. A., and Esfahani, E. T., “Variable stiffness mechanism for suppressing unintended forces in physical human–robot interaction.” *Journal of Mechanism and Robotics*, Vol. 11, No. 2, Pp. 020915, 2019. DOI: [10.1115/1.4042295](https://doi.org/10.1115/1.4042295).
- J14 **Baghdadi, A.**, Megahed, F. M., Esfahani, E. T., and Cavuoto, L. A., “A machine learning approach to detect changes in gait parameters following a fatiguing occupational task.” *Ergonomics*, Vol. 61, No. 8, Pp. 1116–29, 2018. DOI: [10.1080/00140139.2018.1442936](https://doi.org/10.1080/00140139.2018.1442936).
- J13 **Memar, A. H.** and Esfahani, E. T., “Physiological measures for human performance analysis in human–robot tele-exploration.” *IEEE Access*, Vol. 6, Pp. 3694–3705, 2018. DOI: [10.1109/ACCESS.2018.2790838](https://doi.org/10.1109/ACCESS.2018.2790838).
- J12 **Ghobadi, M.**, Singla, P., and Esfahani, E. T., “Robust attitude estimation from uncertain observations of inertial sensors using covariance-inflated multiplicative extended Kalman filter.” *IEEE Transactions on Instrumentation and Measurement*, Vol. 67, No. 1, Pp. 209–217, 2018. DOI: [10.1109/TIM.2017.2761230](https://doi.org/10.1109/TIM.2017.2761230).
- J11 **Ghobadi, M.** and Esfahani, E. T., “A robust automatic gait monitoring approach using a single IMU for home-based applications.” *Journal of Mechanics in Medicine and Biology*, Vol. 17, No. 5, Pp. 17500771–20, 2017. DOI: [10.1142/S0219519417500774](https://doi.org/10.1142/S0219519417500774).
- J10 **Ghobadi, M.**, Majji, M., and Esfahani, E. T., “AOSID: An analytical solution to the output-only system identification problem to estimate physical parameters and unknown input simultaneously.” *Structural Control and Health Monitoring*, Vol. 24, No. 8, e1951, 2017. DOI: [10.1002/stc.1951](https://doi.org/10.1002/stc.1951).
- J09 *Hussein, A. A., ***Shafiei, S. B.**, Sharif, M., Esfahani, E. T., Ahmad, B., Kozłowski, J. D., Hashmi, Z., and Guru, K. A., “Technical mentorship during robot-assisted surgery: A cognitive analysis.” *British Journal of Urology*, Vol. 118, No. 3, Pp. 429–36, 2016. – **First co-authorship.** DOI: [10.1111/bju.13445](https://doi.org/10.1111/bju.13445).
- J08 Guru, K. A., **Shafiei, S. B.**, Khan, A., Hussein, A. A., Sharif, M., and Esfahani, E. T., “Understanding cognitive performance during robot-assisted surgery.” *Urology*, Vol. 86, No. 4, Pp. 751–757, 2015. – **This paper was featured as the cover article.** DOI: [10.1016/j.urology.2015.07.028](https://doi.org/10.1016/j.urology.2015.07.028).
- J07 Guru, K. A., Esfahani, E. T., Raza, S. J., Wang, K., Wilding, G., **Bhat, R.**, and Chowriappa, A. J., “Cognitive skills assessment during robot-assisted surgery: Separating wheat from chaff.” *British Journal of Urology*, Vol. 115, No. 1, Pp. 166–174, 2015. – **This paper was featured in Nature Reviews.** DOI: [10.1111/bju.12657](https://doi.org/10.1111/bju.12657).
- J06 Esfahani, E. T., Wang, S., and Sundararajan, V., “Multi-sensor wireless system for eccentricity and bearing fault detection in induction motors.” *IEEE/ASME Transactions on Mechatronics*, Vol. 19, No. 3, Pp. 818–826, 2014. DOI: [10.1109/TMECH.2013.2260865](https://doi.org/10.1109/TMECH.2013.2260865).
- J05 Esfahani, E. T. and Sundararajan, V., “Classification of primitive shapes using brain–computer interfaces.” *Computer-Aided Design*, Vol. 44, No. 10, Pp. 1011–1019, 2012. DOI: [10.1016/j.cad.2011.04.008](https://doi.org/10.1016/j.cad.2011.04.008).
- J04 Esfahani, E. T. and Sundararajan, V., “Using brain–computer interfaces to detect human satisfaction in human–robot interaction.” *International Journal of Humanoid Robotics*, Vol. 8, No. 1, Pp. 87–101, 2011. DOI: [10.1142/S0219843611002356](https://doi.org/10.1142/S0219843611002356).

- J03 Esfahani, E. T. and Elahinia, M. H., “Developing an adaptive controller for a shape memory alloy walking assistive device.” *Journal of Vibration and Control*, Vol. 16, No. 13, Pp. 1897–1914, 2010. DOI: [10.1177/1077546309344163](https://doi.org/10.1177/1077546309344163).
- J02 Esfahani, E. T. and Elahinia, M. H., “Stable walking pattern for an SMA-actuated biped.” *IEEE/ASME Transactions on Mechatronics*, Vol. 12, No. 5, Pp. 534–541, 2007. DOI: [10.1109/TMECH.2007.905707](https://doi.org/10.1109/TMECH.2007.905707).
- J01 Azimi, E., Ghobadi, M., Esfahani, E. T., Keshmiri, M., and Tehrani, A. F., “Three-dimensional smooth trajectory planning using realistic simulation.” *Lecture Notes in Computer Science*, Vol. 3276, Ed. by D. Nardi et al., Pp. 381–392, Springer-Verlag GmbH, 2005. DOI: [10.1007/978-3-540-32256-6_31](https://doi.org/10.1007/978-3-540-32256-6_31).

Journals–Submitted (Under Review)

- S05 **Gabani, K.** and Esfahani, ET., “Compliance-Assisted Peg Extraction Under Lateral Disturbance”, *International Journal of Intelligent Robotics and Applications*.
- S04 **Gabani, K.**, **Jujjavarapu, S.** and Esfahani, ET., “Variable Stiffness Mechanisms for Enhanced Collision Detection and Impact Attenuation in Robotic Systems”, *Journal of Mechanism and Robotics*.
- S03 Fu, T., Zhan, Z., Zhao, Z., Su, S., Lin, X., Esfahani, ET., Dantu, K., Chowdhury, S., and Wang, C., “AnyNav: Visual Neuro-Symbolic Friction Learning for Off-road Navigation.” *International Journal of Robotics Research*. DOI: [10.48550/arXiv.2501.12654](https://doi.org/10.48550/arXiv.2501.12654)
- S02 KrishnaKumar, P., Paul, S., Behjat, A., **Manjunatha, H.**, Maurer, N., **Distefano, J.**, Dantu, K., Esfahani, ET., Chowdhury, S., “Swarm Tactical Framework for Complex Heterogeneous Missions in Adversarial Environments.” *Swarm and Evolutionary Computation*.
- S01 **Manjunatha, H.**, Krishnakumar, P., **Distefano, J.**, **Jani, A.**, Behjat, A., Ghassemi, P., Chowdhury, S., Dantu, K., and Esfahani, ET., “SHaSTA: A Simulator for Human and Swarm Team Applications”, *Journal of Intelligent and Robotic Systems*, DOI: [10.21203/rs.3.rs-4338790/v1](https://doi.org/10.21203/rs.3.rs-4338790/v1).

PATENTS

- P02 Esfahani, ET., “Robotic gripper with variable stiffness actuators and methods for same.”, (Patent No. [WO2018223148A2](https://patents.google.com/patent/WO2018223148A2), [US11607817B2](https://patents.google.com/patent/US11607817B2)).
- P01 Azimi, E., Ghobadi, M., Esfahani, ET., Goudarzi, O. and Keshmiri, M., “Dynamic Control of Humanoid Robot with minimum control parameters”, Patent No.32266-Date 7/23/2005 Iran.

PEER-REVIEWED CONFERENCE PROCEEDINGS

- C68 Meshram, PW., Adhivarahan, C., Esfahani, ET., Chowdhury, S., Wang, C., and Dantu, K., “From Regions to Hierarchies: Fast, Context-Aware Off-Road Path Planning”, *IROS Workshops on Semantic-Aware Mapping and Navigation Towards Cognitive and Adaptive Robots.*, Pittsburgh, Pennsylvania, Sep 27.
- C67 **Dalland, K.**, Poddar, P., Chowdhury, S., and Esfahani, E. T. “Traversability-Aware Cooperative Path Planning for Human–UGV Casualty Evacuation .” *IEEE International Conference on Systems, Machine and Cybernetics*, Bellevue, WA, Oct. 4–7, 2026.
- C66 **Jujjavarapu, S.**, and Esfahani, E. T. “Series Passive Nonlinear Compliance for Stable Admittance-Controlled Physical HumanRobot Collaboration in Low-Tolerance Assembly.” *IEEE/ASME International Conference on Advanced Intelligent Mechatronics*, Genoa, Italy, July 7–10, 2026.
- C65 Zhao, Z., Fu, T., Su, S., Du, Q., Esfahani, ET., Dantu, K., Chowdhury, S., Wang C., “Learning When to Jump for Off-road Navigation” *Robotics: Science and Systems 2026*, Sydney, Australia, July 13–17, 2026.
- C64 **Dalland, K.**, Wang, C., Dantu, K., Chowdhury, E. T., “Improving Human Traversal-Time Prediction by Learning Context-Dependent Walking Speed Dynamics.” *48th International Conference of IEEE Engineering in Medicine and Biology*, Toronto, Canada, July 26–30, 2026.

- C63 **Manjunatha, H.**, and Esfahani, E. T., “Multimodal Neurophysiological Classification of Reaction Time for Adaptive Multi-Robot Teleoperation.” *6th International Neuroergonomics Conference*, Boston, MA, July 13–16, 2026.
- C62 Poddar, P., Esfahani, E. T., Dantu, K., and Chowdhury, S., “Automated Generation of Diverse Courses of Actions for Multi-Agent Operations using Binary Optimization and Graph Learning.” *IEEE 21st International Conference on Automation Science and Engineering*, Los Angeles, CA, Aug. 17–20, 2025.
- C61 **Gabani, K.** and Esfahani, E. T., “Modeling and simulation of soft tissue for studying robot–tissue interaction.” *ASME International Design Engineering Technical Conferences & Computers and Information in Engineering Conference*, Anaheim, CA, Aug. 17–20, 2025.
- C60 **Dalland, K.**, Wang, C., Dantu, K., Chowdhury, S., and Esfahani, E. T., “Hybrid human model for time of hike prediction.” *47th Annual International Conference of the IEEE Engineering in Medicine and Biology Society*, Copenhagen, Denmark, July 14–17, 2025. – **Selected as one of the top 7% papers of the conference.**
- C59 **Distefano, J.**, Chowdhury, S., and Esfahani, E. T., “Observational error-related negativity for trust evaluation in human–swarm interaction.” *5th International Neuroergonomics Conference*, Bordeaux, France, July 8–12, 2024.
- C58 Krishnakumar, P., Paul, S., **Manjunatha, H.**, Corra, M., Esfahani, E. T., and Chowdhury, S., “Towards physically talented aerial robots with intelligent swarm behavior thereof: An efficient co-design approach.” *ASME International Design Engineering Technical Conferences & Computers and Information in Engineering Conference*, Washington, DC, Aug. 25–28, 2024.
- C57 **Dalland, K.**, **Distefano, J.**, and Esfahani, E. T., “Predicting human context-aware action modification for AI assistance in visually demanding tasks.” *ASME International Design Engineering Technical Conferences & Computers and Information in Engineering Conference*, Washington, DC, Aug. 25–28, 2024.
- C56 Krishnakumar, P., Paul, S., **Manjunatha, H.**, Gupta, R., Esfahani, E. T., and Chowdhury, S., “A talent-infused reinforcement learning approach to co-design of tactical UAV swarm.” *AAAI 2024 Bridge: AI4Design*, Vancouver, BC, Canada, Feb. 20–21, 2024.
- C55 **Gabani, K.**, **Ji, Y. O.**, and Esfahani, E. T., “Efficient object manipulation in confined space using compliance-based gripper.” *ASME International Design Engineering Technical Conferences & Computers and Information in Engineering Conference*, Boston, MA, Aug. 20–23, 2023.
- C54 **Distefano, J. P.**, Cho, H., Krishnakumar, P., Chowdhury, S., and Esfahani, E. T., “Framework for analyzing human cognition in operationally relevant human–swarm interaction.” *ASME International Design Engineering Technical Conferences & Computers and Information in Engineering Conference*, Boston, MA, Aug. 20–23, 2023.
- C53 **Jujjavarapu, S.** and Esfahani, E. T., “A variable stiffness end-of-arm mechanism for safe operation in industrial environments.” *ASME International Design Engineering Technical Conferences & Computers and Information in Engineering Conference*, St. Louis, MO, Aug. 14–17, 2022.
- C52 Behjat, A., **Manjunatha, H.**, Kumar, P., **Jani, A.**, Collins, L., Ghasemi, P., **Distefano, J.**, Doermann, D., Dantu, K., Esfahani, E. T., and Chowdhury, S., “Learning swarm tactics over complex adversarial environments.” *IEEE International Symposium on Multi-Robot and Multi-Agent Systems*, Cambridge, UK, Nov. 4–5, 2021. – **Received Best Paper Award.**
- C51 **Distefano, J. P.**, **Manjunatha, H.**, Chowdhury, S., Dantu, K., Doermann, D., and Esfahani, E. T., “Using physiological information to classify task difficulty in human–swarm interaction.” *IEEE International Conference on Systems, Man, and Cybernetics*, Melbourne, Australia, Oct. 17–21, 2021.
- C50 **Kumar, R. S.**, **Jujjavarapu, S.**, Lee, L. H., and Esfahani, E. T., “Fatigue detection in human–robot collaboration using sEMG data.” *ASME International Design Engineering Technical Conferences & Computers and Information in Engineering Conference*, Aug. 17–20, 2021.

- C49 Collins, L., Ghasemi, P., Chowdhury, S., Dantu, K., Esfahani, E. T., and Doermann, D., “Scalable coverage path planning of multi-robot teams for monitoring non-convex areas.” *IEEE International Conference on Automation and Robots*, Xi’an, China, May 30–June 5, 2021.
- C48 **Manjunatha, H.** and Esfahani, E. T., “Extracting interpretable EEG features from a deep learning model to assess the quality of human–robot co-manipulation.” *10th International IEEE EMBS Conference on Neural Engineering*, May 4–6, 2021.
- C47 **Manjunatha, H., Jujjavarapu, S.**, and Esfahani, E. T., “Classification of motor control difficulty using EMG in physical human–robot interaction.” *IEEE International Conference on Systems, Man, and Cybernetics*, Toronto, ON, Oct. 11–14, 2020.
- C46 **Manjunatha, H., Distefano, J. P.**, Ghasemi, P., Chowdhury, S., Dantu, K., Doermann, D., and Esfahani, E. T., “Using physiological measures to predict tactical decisions in human–swarm teams.” *IEEE International Conference on Systems, Man, and Cybernetics*, Toronto, ON, Oct. 11–14, 2020.
- C45 **Basu, A., Jujjavarapu, S.**, and Esfahani, E. T., “Design of a novel variable stiffness active ankle–foot orthosis using permanent magnets for drop-foot assistance.” *ASME International Design Engineering Technical Conferences & Computers and Information in Engineering Conference*, St. Louis, MO, Aug. 16–19, 2020.
- C44 **Manjunatha, H.**, Pareek, S., **Memar, A. H.**, Kesavadas, T., and Esfahani, E. T., “Effect of haptic assistance strategy on mental engagement in fine motor tasks.” *2nd Neuroadaptive Technology Conference*, Liverpool, UK, July 16–18, 2019.
- C43 **Jujjavarapu, S.** and Esfahani, E. T., “A variable stiffness mechanism for stable interaction in collaborative environments: An EMG study.” *ASME International Design Engineering Technical Conferences & Computers and Information in Engineering Conference*, Anaheim, CA, Aug. 18–21, 2019.
- C42 **Jujjavarapu, S.** and Esfahani, E. T., “Improving stability in upper limb rehabilitation using variable stiffness.” *41st Annual International Conference of the IEEE Engineering in Medicine and Biology Society*, Berlin, Germany, July 23–27, 2019.
- C41 **Gorantla, K. R.** and Esfahani, E. T., “Surgical skill assessment using motor control features and hidden Markov model.” *41st Annual International Conference of the IEEE Engineering in Medicine and Biology Society*, Berlin, Germany, July 23–27, 2019.
- C40 Pareek, S., **Manjunatha, H.**, Esfahani, E. T., and Kesavadas, T., “MyoTrack: Tracking subject participation in robotic rehabilitation using sEMG and IMU.” *International Symposium on Medical Robotics*, Atlanta, GA, Apr. 3–5, 2019.
- C39 **Manjunatha, H., Memar, A. H.**, and Esfahani, E. T., “Classification of task type and reaction time of operator in simulated multiple robot tele-exploration.” *2nd International Neuroergonomics Conference*, Philadelphia, PA, June 27–29, 2018.
- C38 **Memar, A. H.** and Esfahani, E. T., “Using EEG for predicting user preferences of physical compliance in human–robot cooperation.” *2nd International Neuroergonomics Conference*, Philadelphia, PA, June 27–29, 2018.
- C37 **Jujjavarapu, S.**, Karami, M. A., and Esfahani, E. T., “Variable stiffness mechanism for tremor suppression in human–robot interaction.” *ASME International Design Engineering Technical Conferences & Computers and Information in Engineering Conference*, Quebec City, Canada, Aug. 26–29, 2018.
- C36 **Memar, A. H.** and Esfahani, E. T., “A variable stiffness gripper with antagonistic magnetic springs for enhancing manipulation.” *Robotics: Science and Systems*, Pittsburgh, PA, June 26–30, 2018.
- C35 **Memar, A. H.** and Esfahani, E. T., “EEG correlates of motor control difficulty in physical human–robot interaction: A frequency domain analysis.” *IEEE Haptics Symposium*, Pp. 229–234, San Francisco, CA, Mar. 25–28, 2018.

- C34 **Jujjavarapu, S., Memar, A. H., and Esfahani, E. T.**, “Design of a 2D haptic system with passive variable stiffness using permanent magnets for upper-limb rehabilitation.” *ASME International Design Engineering Technical Conferences & Computers and Information in Engineering Conference*, Cleveland, OH, Aug. 30–Sep. 2, 2017.
- C33 **Memar, A. H., Mastroarde, N., and Esfahani, E. T.**, “Design of a novel variable stiffness gripper using permanent magnets.” *IEEE International Conference on Robotics and Automation*, Singapore, May 29–June 3, 2017.
- C32 **Memar, A. H. and Esfahani, E. T.**, “Design of a novel variable stiffness gripper.” *IEEE International Symposium on Robot and Human Interactive Communication*, New York City, NY, Aug. 26–31, 2016.
- C31 **Memar, A. H. and Esfahani, E. T.**, “Human control of multiple robots in a collaborative tele-exploration.” *IEEE International Symposium on Robot and Human Interactive Communication*, New York City, NY, Aug. 26–31, 2016.
- C30 **Ghobadi, M. and Esfahani, E. T.**, “A robust method to improve estimation accuracy of walking gait kinematics by considering geometrical constraints on Kinect data.” *ASME International Design Engineering Technical Conferences & Computers and Information in Engineering Conference*, Charlotte, NC, Aug. 21–24, 2016.
- C29 **Pillai, N., Patra, A., and Esfahani, E. T.**, “Modeling post-impact injury propagation in traumatic brain injury.” *ASME International Design Engineering Technical Conferences & Computers and Information in Engineering Conference*, Charlotte, NC, Aug. 21–24, 2016.
- C28 **Dinparastdjadid, A. and Esfahani, E. T.**, “Spike sorting via multi-cluster feature selection.” *ASME International Design Engineering Technical Conferences & Computers and Information in Engineering Conference*, Charlotte, NC, Aug. 21–24, 2016.
- C27 **Memar, A. H. and Esfahani, E. T.**, “Human performance in a mixed human–robot team: Design of a collaborative framework.” *ASME International Design Engineering Technical Conferences & Computers and Information in Engineering Conference*, Charlotte, NC, Aug. 21–24, 2016.
- C26 **Ghobadi, M., Yuqian, Z., Rana, A., Esfahani, E. T., and Esfandiari, L.**, “Quantitative estimation of electro-osmosis force on charged particles inside a borosilicate nanopore-based sensor.” *38th International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC)*, Orlando, FL, Aug. 16–20, 2016.
- C25 **Guru, K. A., Shafiei, S. B., Khan, A., Sharif, M., Raza, S. J., Fiorica, T., Wing, J., Durrani, and Esfahani, E. T.**, “Surgical workload evaluation during robotic-assisted surgery.” *American Urological Association Annual Meeting*, New Orleans, LA, May 15–19, 2015.
- C24 **Guru, K. A., Shafiei, S. B., Khan, A., Sharif, M., Korszen, S., Berka, C., and Esfahani, E. T.**, “Surgical mentorship during robot-assisted surgery: Is the surgeon really with the program?” *International Network for the Science of Team Science Conference*, Bethesda, MD, June 2–5, 2015.
- C23 **Ghobadi, M., Kesavadas, T., Sosnoff, J., and Esfahani, E. T.**, “Using minimum jerk model for human activity classification in home-based monitoring.” *IEEE International Conference on Rehabilitation Robotics*, Singapore, Aug. 11–14, 2015.
- C22 **Shafiei, S. B., Guru, K. A., and Esfahani, E. T.**, “Using two-third power law for segmentation of hand movement in robotic-assisted surgery.” *ASME International Design Engineering Technical Conferences & Computers and Information in Engineering Conference*, Boston, MA, Aug. 2–5, 2015.
- C21 **Ghobadi, M., Majji, M., and Esfahani, E. T.**, “Simultaneous output-only identification of physical parameters and unknown inputs of linear systems.” *ASME International Design Engineering Technical Conferences & Computers and Information in Engineering Conference*, Boston, MA, Aug. 2–5, 2015.
- C20 **Pareek, S., Sharma, V., and Esfahani, E. T.**, “Human factor study in gesture-based CAD environment.” *ASME International Design Engineering Technical Conferences & Computers and Information in Engineering Conference*, Boston, MA, Aug. 2–5, 2015.

- C19 Esfahani, E. T., **Pareek, S.**, Chembrammell, P., **Ghobadi, M.**, and Kesavadas, T., “Adaptation of rehabilitation systems based on users mental engagement.” *ASME International Design Engineering Technical Conferences & Computers and Information in Engineering Conference*, Boston, MA, Aug. 2–5, 2015.
- C18 **Memar, A. H.** and Esfahani, E. T., “Modeling and dynamic parameter identification of the Schunk Powerball robotic arm.” *ASME International Design Engineering Technical Conferences & Computers and Information in Engineering Conference*, Boston, MA, Aug. 2–5, 2015.
- C17 Bani-Hani, M., Borazjani, I., Esfahani, E. T., Krovi, V., and Karami, M. A., “Generation and optimization of traveling vibrating waves in self-assembling swimming smart boxes.” *ASME International Design Engineering Technical Conferences & Computers and Information in Engineering Conference*, Boston, MA, Aug. 2–5, 2015.
- C16 Daghooghi, M., Borazjani, I., Karami, M. A., and Esfahani, E. T., “Self-assembling swimming smart boxes.” *ASME Conference on Smart Materials, Adaptive Structures and Intelligent Systems*, Newport, RI, Sep. 8–10, 2014.
- C15 Karami, M. A., Esfahani, E. T., Daghooghi, M., and Borazjani, I., “Self-propelled swimming simulations of self-assembling smart boxes.” *ASME Conference on Smart Materials, Adaptive Structures and Intelligent Systems*, Newport, RI, Sep. 8–10, 2014.
- C14 **Ghobadi, M.** and Esfahani, E. T., “Foot-mounted inertial measurement unit for activity classification.” *36th International Conference of the IEEE Engineering in Medicine and Biology Society*, Chicago, IL, Aug. 26–30, 2014.
- C13 **Ghobadi, M.** and Esfahani, E. T., “Adaptive segmentation of air gesture identification.” *ASME International Design Engineering Technical Conferences & Computers and Information in Engineering Conference*, Buffalo, NY, Aug. 17–20, 2014.
- C12 **Shafiei, S. B.** and Esfahani, E. T., “Synchronization of brain activity and sketch features in a multi-modal CAD interface.” *ASME International Design Engineering Technical Conferences & Computers and Information in Engineering Conference*, Buffalo, NY, Aug. 17–20, 2014.
- C11 Deshpande, A., Esfahani, E. T., and Rai, R., “Geon and non-accidental relations in 2D shape abstraction: A BCI study.” *ASME International Design Engineering Technical Conferences & Computers and Information in Engineering Conference*, Buffalo, NY, Aug. 17–20, 2014.
- C10 Shankar, S. S., Prakhar, J., Esfahani, E. T., and Rai, R., “Sketching in air: A single-stroke classification framework.” *ASME International Design Engineering Technical Conferences & Computers and Information in Engineering Conference*, Buffalo, NY, Aug. 17–20, 2014.
- C09 **Bhat, R.**, Deshpande, A., Rai, R., and Esfahani, E. T., “BCI touch-based system: A multimodal CAD interface for object manipulation.” *ASME International Mechanical Engineering Congress & Exposition*, San Diego, CA, Nov. 15–21, 2013.
- C08 Wang, S., Esfahani, E. T., and Sundararajan, V., “Evaluation of SSVEP as passive feedback for improving the performance of brain-machine interfaces.” *ASME International Design Engineering Technical Conferences & Computers and Information in Engineering Conference*, Chicago, IL, Aug. 12–15, 2012.
- C07 Esfahani, E. T. and Sundararajan, V., “Using brain-computer interfaces for geometry selection in CAD systems: P300 detection approach.” *ASME International Design Engineering Technical Conferences & Computers and Information in Engineering Conference*, Washington, DC, Aug. 28–31, 2011.
- C06 Esfahani, E. T. and Sundararajan, V., “A text understanding interface for physical system modeling and simulation.” *ASME International Design Engineering Technical Conferences & Computers and Information in Engineering Conference*, San Diego, CA, Aug. 30–Sep. 2, 2009.

- C05 Esfahani, E. T., Elahinia, M. H., Hefzy, M. S., and Armstrong, C., “Shape memory alloys: An alternative actuation method for orthosis.” *North American Congress on Biomechanics*, Ann Arbor, MI, Aug. 5–9, 2008.
- C04 Esfahani, E. T., Elahinia, M. H., and Hefzy, M. S., “Developing an active ankle–foot orthosis based on shape memory alloy actuators.” *ASME Summer Bioengineering Conference*, Keystone, CO, June 20–24, 2007.
- C03 Tarkesh, E. and Elahinia, M. H., “Nonlinear control techniques for an SMA active ankle–foot orthosis.” *ASME International Mechanical Engineering Congress and Exposition*, Seattle, WA, Nov. 11–15, 2007.
- C02 Esfahani, E. T. and Elahinia, M. H., “Walking pattern filter for dynamic biped robot with SMA actuators.” *ASME International Mechanical Engineering Congress and Exposition*, Chicago, IL, Nov. 5–10, 2006.
- C01 Ghobadi, M., Azimi, E., Esfahani, E. T., and Keshmiri, M., “Stable walking pattern generation for humanoid robot.” *13th International Conference on Mechanical Engineering*, Pp. 2303, Isfahan, Iran, May 17–19, 2005.

Conference–Submitted (Under Review)

- U01 Poddar, P., Meshram, P.S., Dantu, K., Esfahani, E. T., and Chowdhury, S., “Graph Learning based Sequencing of Time-bound Tasks to Generate Course of Actions for Multi-Robot Teams in Realistic Environments.” *IEEE/RSJ International Conference on Intelligent Robots and Systems*, Pittsburgh, PA, Sep 27–Oct 1, 2026.

CONFERENCE/WORKSHOPS ABSTRACTS & POSTERS

- A14 Esfahani, E. T., “Adjustable stiffness gripper for safe produce handling.” *Agri-Food Robotics Conference*, Cambridge, UK, May 15–16, 2025.
- A13 Krisshnakumar, P., Paul, S., Behjat, A., Manjunatha, H., Maurer, N., Esfahani, E. T., and Chowdhury, S., “Comparative exploration of three approaches to learning heterogeneous robot swarm operations over abstracted complex adversarial environments.” Workshop on Multi-Robot Learning, *IEEE International Conference on Robotics and Automation*, London, UK, May 29, 2023.
- A12 Memar, A. H. and Esfahani, E. T., “EEG-based workload classification for physical human–robot cooperation.” Workshop on Cognitive and Social Neuroscience Methods for HRI, *ACM/IEEE International Conference on Human–Robot Interaction*, Chicago, IL, Mar. 5, 2018.
- A11 Pareek, S., Chembrammell, P., Esfahani, E. T., and Kesavadas, T., “Cognitive haptic-based rehabilitation system for patient-centric home therapy.” *39th Annual International Conference of the IEEE Engineering in Medicine and Biology Society*, Jeju Island, Korea, July 11–15, 2017.
- A10 Memar, A. J. and Esfahani, E. T., “Human control of multiple robots in a collaborative tele-exploration.” *IEEE International Symposium on Robot and Human Interactive Communication*, New York, NY, Aug. 26–31, 2016.
- A09 Auerbach, B. D., Chen, G. D., Ding, D., Ghobadi, M., Esfahani, E. T., and Salvi, R. J., “Maladaptive neuronal gain enhancement along the ascending auditory pathway following acoustic trauma.” *Neural Circuits*, Cold Spring Harbor, NY, Apr. 6–9, 2016.
- A08 Ghobadi, M., Memar, A. H., and Esfahani, E. T., “Employing human gestural feedback in physical human–robot interactions based on IMU and EMG sensors.” *IEEE International Conference on Robotics and Automation*, Seattle, WA, May 26–30, 2015.
- A07 Pareek, S., Kesavadas, T., and Esfahani, E. T., “Using brain monitoring for adaptive human–robotic interaction in robotic rehabilitation.” *Personal Health and Human Performance Conference*, Dayton, OH, Dec. 9, 2014.

- A06 **Shafiei, S. B.**, Guru, K. A., Sharif, M., and Esfahani, E. T., “Using human motor control for classification of surgical expertise.” *Clinical Translation of Medical Robots Workshop at the IEEE/RSJ International Conference on Robotics and Systems*, Chicago, IL, Sep. 17, 2014.
- A05 Esfahani, E. T., Zimcosky, M., and Elahinia, M. H., “Design and control of an SMA walking robot.” *Proceedings of SPIE Smart Structures and Materials*, San Diego, CA, Mar. 8–12, 2009.
- A04 Esfahani, E. T. and Elahinia, M. H., “The nonlinear stress-based switching control for shape memory alloy actuators.” *12th Conference on Nonlinear Vibration, Dynamics and Multibody Systems*, Blacksburg, VA, June 1–5, 2008.
- A03 Esfahani, E. T., Elahinia, M. H., and Hefzy, M. S., “Sliding mode controller for a knee prosthesis actuated by shape memory alloy.” *11th Conference on Nonlinear Vibration, Stability and Dynamics of Structures*, Blacksburg, VA, Aug. 13–17, 2006.
- A02 Esfahani, E. T., Tehrani, A. F., and Tarkesh, H., “Pre-controlling the semi-passive biped walking gait using realistic simulation and genetic algorithm.” *15th International Symposium on Measurement and Control in Robotics*, Brussels, Belgium, Nov. 8–10, 2005.
- A01 Abdollahi, A., Samani, H., Ajoodanian, M., Arami, A., Azimi, E., Ghobadi, M., DaneshPanah, M., Ostadi, H., Shariat, S., Esfahani, E. T., Yeganeh, R., “Persia middle-size robot team description paper.” *Proceedings of the 6th International RoboCup Symposium*, Pp. 495, Fukuoka, Japan, June 24–25, 2002.

INVITED TALKS

- T17 Human-AI interaction powered by physiological monitoring. *PhD Seminar Series, Mechanical Industrial Engineering Department, Rochester Institute of Technology*, March 2025.
- T16 From Human-in the Loop to Human-AI Interaction. *Graduate Seminar Series, Mechanical Industrial and Manufacturing Engineering Department, University of Toledo*, Jan 2025.
- T15 Invited Speaker and Panelist: How real-time human sensing will facilitate research on safe human-autonomy swarms. *AIrTonomy Workshop, Center on AI for Digital, Autonomous and Augmented Aviation, Purdue University*, Sep 2024.
- T14 Invited Speaker: Variable stiffness robotic gripper for dynamic manipulations in assembly lines. *Marquardt Group, Cazenovia NY*, May 2023.
- T13 Distinguished Researcher Speaker Series: Human-in-the Loop System: A gateway to Human-AI Partnership. *Accenture Labs, San Francisco CA*, May 2022.
- T12 Invited speaker: Reforming Rehabilitation Services in Respond to COVID-19 Outbreak, the requirement and future direction. *Workshop on Safeguarding Public Health During Infectious Disease Pandemics Using Medical Robotics, Wearable Technology, and AI*, May 2021.
- T11 Invited Plenary Keynote Speaker: The bridge between brains and smart robotic /cyber-physical systems. *The Thirteenth International Symposium on Tools and Methods of Competitive Engineering (TMCE 2020)*, Dublin, Ireland, May 2020.
- T10 A New Era of Automation; A.I. and Robotics in Manufacturing. *E-Week Seminar Series, New York State Society of Professional Engineers (NSPE-NY), Erie Niagara Chapter*, February 2020.
- T09 Human Factors and Brain Computer Cognition in Robotic Surgery, *Workshop for 5G Medical Tele-Robotics, University of Illinois at Urbana-Champaign*, June 2019.
- T08 Enhancing Human-Robot Interaction via Brain Computer Interfaces, *Cognitive Science Colloquium, University at Buffalo Psychology Department, Buffalo, NY*, April 2018.
- T07 Enhancing the Human-Robot Interaction via Brain Computer Interfaces, *Department of Electrical Engineering and Computer Science, University of Cincinnati, Cincinnati, OH*, Aug. 2017.

- T06 Human Activity Classification using single Inertial Measurement Unit, *Amiigo, Mountain View, CA*, May. 2014.
- T05 New Generation of CAD/E Systems based on Brain Computer Interaction, *Advanced Brain Monitoring, Carlsbad, CA*, June 2012.
- T04 Hybrid Brain Computer Interface-SSVEP and Motor Imagery, *Department of Mechanical Engineering, University of California, Riverside CA*, June 2012.
- T03 New Generation of CAD/E Systems based on Brain Computer Interaction, *Department of Mechanical Engineering, University at Buffalo SUNY, Buffalo NY*, May 2012.
- T02 Using Brain Computer Interfaces in CAD systems, *Neurosky Inc., San Jose CA*, May 2012.
- T01 Nonlinear Control Techniques for Precise Actuation of Shape Memory Alloys, *General Motors Fuel Cell Research Center, Honeoye Falls, NY*, Sep. 2007.

SELECTED MEDIA COVERAGE

- M05 “Scientists give robots a sense of touch with fabric that mimics human skin” in [UBNow](#) and featured by other news outlets such as: [Futurity](#), [Interesting Engineering](#), [Tech Xplore](#), [MSN](#), [ASM International](#) among others.
- M04 “To advance robot swarms, UB engineers turn to video games” in [UBNow](#) and featured by other news outlets such as: [FOX NEWS](#), [Interesting Engineering](#), [International Business Times](#), [Futurism](#), [Digital Trends](#), and [New York Post](#) among others.
- M03 “A robot with a firm, yet gentle grip”, Sep 2019, published in [UBNow](#) and featured by other news outlets such as: [Science Times](#), [ScienceDaily](#), [Communications of the ACM](#), [World Economic Forum](#), [Workforce Development Technology News Network](#), and [IEEE Spectrum \(Video Fridays\)](#) among others.
- M02 “Nothing ‘virtual’ about the reality of VR technology opportunities in Buffalo” Dec 2016, [Interview with Buffalo’s NPR News Station\(WBFO\)](#).
- M01 “Cognitive Assessment Provides Window into Proficiency Level of Robot-Assisted Surgeons”, July 2014 published by [Roswell Park Cancer Institute](#) and covered by other news outlet such as [ScienceDaily](#), and [Medical Express](#).

SERVICES

PROFESSIONAL COMMUNITY SERVICES

- **Advisory Board:**

- Department of Mechanical Engineering, University of California Riverside 2015–Now

- **Editorial Activities:**

- Associate Editor, *Frontiers in Neuroergonomics*, 2026–Now
 - Associate Editor, *ASME Journal of Computing and Information Science in Eng.* 2020–Now
 - Guest Editor, *ASME Journal of Computing and Information Science in Eng.* 2023
Special Topic: Challenges and Opportunities in Computing Research to Enable Next Generation Engineering Applications.
 - Guest Editor, *Frontiers in Neurorobotics, Frontiers in Robotics and AI* 2021
Special Topic: Neuroergonomics in Human-Robot Interaction.
 - Guest Editor, *ASME Journal of Computing and Information Science in Eng.* 2021
Special Topic: Symbiotic Human-AI Partnership for Next Generation Factories.

- Guest Editor, Journal of Computer-Aided Design, *Special issue: Application of Brain Computer Interfaces in Next Generation of Computer-Aided Design/Engineering Systems.* 2014
- Associate Editor, IEEE International Conference on Robotics and Automation (ICRA). 2014
- **Conference Leadership:**
 - Conference Chair, 10th Frontiers in Biomedical Devices, ASME IDETC\CIE, Cleveland OH 2017
 - Conference Chair, 9th Frontiers in Biomedical Devices, ASME IDETC\CIE, Charlotte, NC 2016
 - Local Organizing Chair, ASME IDETC\CIE, Buffalo NY 2014
- **Conference Program Committee Member:**
 - 6th International Neuroergonomics Conference, Boston MA 2026
 - 15th International Conference on Digital Human Modeling and Applications in Health, Safety, Ergonomics and Risk Management, HCII 2024, Washington DC. 2024
- **Conference Reviewer Coordinator:**
 - Simulation Based Design under Uncertainty, *Design Automation Conference* IDETC 2015
 - Simulation Based Design under Uncertainty, *Design Automation Conference* IDETC 2014
- **Other ASME Activities**
 - Graduate Poster Session Organizer, *ASME IDETC/CIE Conference* 2020
 - Member of CAPPD Technical Committee, *ASME CIE Division* 2016–2022
Secretary 2019, Vice Chair 2020, Chair 2021, Past Chair 2022
 - Topic Organizer, *ASME IDETC/CIE Conference.* IDETC 2019-2025
 - CIE: Computer-Aided Product and Process Development (CAPPD General)
 - CIE: Human-In-the Loop Product Design and Automation
 - CIE: Artificial Intelligence and Machine Learning in Design and Manufacturing
 - DAC: Design of Autonomous Systems
- **Journal Manuscript Review:**
 - Science Robotics
 - IEEE T. on Robotics
 - IEEE Robotics and Automation Letters
 - IEEE Robotics & Automation Magazine
 - IEEE Access
 - IEEE/ASME T. on Mechatronics
 - IEEE T. on Industrial Electronics
 - IEEE T. on Instrumentation and Measurement
 - IEEE T. on Neural Systems & Rehabilitation
 - IEEE T. on Biomedical Engineering
 - Annuals of Biomedical Eng.
 - IEEE T. on Human Machine Systems
 - Robotics and Autonomous Systems
 - Automation in Construction
 - PLOS ONE
 - Int J. of Advanced Robotic Systems
 - Measurement
 - Computer-Aided Design
 - J. of Intelligent & Robotic Systems
 - IEEE Control Systems Letters
 - BioMedical Eng OnLine
 - ASME Journal of Computing and Information Science in Eng
 - Sensors

- J. of Medical Robotic Research
- ASME Journal of Mechanism and Robotics
- Actuators
- Robotica
- J. of Intelligent Material Systems and Structures
- Intelligent Manufacturing

• **Conference Manuscript Review:**

- ASME International Design Engineering Technical Conferences (IDETC 2011-2023)
- IEEE International Conference on Robotic and Automation (ICRA 2014-2023)
- IEEE/RSJ Int. Conf. on Intelligent Robots & Systems (IROS 2014, 2018, 2020)
- ACM/IEEE International Conference on Human Robot Interaction (HRI 2015)
- International Conference on Robotics and Biomimetics (ROBIO 2014)
- IEEE Haptic Symposium (Haptics 2018)
- IEEE Int. Conf. on Biomedical Robotics and Biomechatronics (BioRob 2020)
- IEEE International Carpathian Control Conference (ICCC 2012)

• **Proposal Review**

- Proposal Review for SUNY Empire Innovation Program 2024
- Proposal Review for Swiss National Science Foundation 2022
- Proposal Review Natural Sciences and Engineering Research Council of Canada 2022
- NSF Panelist for Computer and Information Science and Engineering (CISE) 2019, 2020, 2021, 2023
- NSF Panelist for CISE Career Program 2024
- NSF Panelist for Safe Learning-Enabled Systems 2024
- NSF Panelist for Future of Work at the Human-Technology Frontier Program (FW-HTF) 2019
- NSF Panelist for Future Manufacturing Program. 2020, 2021
- NSF Panelist for SBIR/STTR Program. 2021
- NSF Panelist for Computer and Network Systems Division, CPS Program. 2021

UNIVERSITY SERVICES

- Served as a judge for 2024 Celebration of Student Academic Excellence, 3/2024
- Served on the Committee of Future of Computer Science and Computing, 1/2022-9/2023
- Served on IMPACT Physical and Engineering Review Panel, 2/2016
- Human-in-loop Systems Workshop, CDSE Day, 3/2016

DEPARTMENTAL SERVICES

- Director of MAE Graduate Studies Committee, 8/2023–Now
- Member of MAE Strategic Planning Committee, 9/2018–Now
- Member of Career Development Committee for three new Tenure-Track Faculties, 9/2019–Now
- Chair of Robotic Teaching Faculty Search Committee, 2023
- Chair of MAE Faculty Search Committee, 2021

- Member of MAE Graduate Studies Committee, 9/2013–8/2018
- Member of MAE Faculty Search Committee, 2013-16 and 2019-20
- Judge for MAE Student Poster Competition, 2013-16 and 2018, 2022, 2023
- Undergraduate Student Graduation Marshal, 2015
- Department Coordinator for UB/McNari Graduate School Visit, Summer 2014
- Advised MAE Undergraduate Students, Fall 2013 –Current.

RESEARCH SUPERVISION

PhD Students (3 Current, 7 Graduated), MS Students (2 Current, 34 Graduated)

PhD STUDENTS–CURRENT

- **Kristian Dalland**, PhD. Candidate, 09/2023–Now
Dissertation: Multi-hypothesis human performance and cognitive metric estimation for learning tactical decisions in multi- human-agent operations.
- **Hamid Manuchehri**, PhD. Candidate, 01/2024–Now
Dissertation: Compliant adjustment in object manipulation using reinforcement learning.
- **Mandar Payare**, PhD. Student, 01/2026–Now
Dissertation: Contact informed in-hand manipulation.

PhD STUDENTS–PAST

- **Krushang Khimjibhai Gabani**, PhD. 2026
Current Position: Software Engineer at Amazon Frontier AI & Robotics, San Francisco CA.
Dissertation: Compliance-Centric Robotic Manipulation: From Contact Regulation to Soft-Body Interaction Prediction.
– Received 2021 UB MAE Teaching Fellowship Award.
- **Joseph Distefano**, PhD. 2024
Current Position: Software Engineer at Squire Solutions, Rochester NY.
Dissertation: Enhancing Human-In-the-Loop Reinforcement Learning via physiological information.
– Received 2020 CIE Student Travel Award in IDETC 2020.
– Received 2024 Best Innovation in HRI Award in Neurodesign Expo & Competition, IEEE ICRA.
- **Sri Sadhan Jujjavarapu**, PhD. 2022
Current Position: Principal Research Associate, Accenture Labs., San Francisco CA.
Dissertation: Improving Physical Human-Robot Interaction using Variable Stiffness Actuators and Electromyography.
– Received 1st place Award in 2019 ASME Student Mechanisms & Robotics Design Competition.
– Received 2021 UB MAE Teaching Fellowship Award.
- **Hemnath Manjunatha**, PhD. 2020
Current Position: Assistant Professor of Mechanical and Aerospace Engineering, Oklahoma State university, Stillwater, OK.
Dissertation: Addressing Stability, Transferability, and Interpretability Issues in Physical Human-Robot Interaction using Physiological Data and Deep Learning.
– Received 2017 CIE Student Travel Award for IDETC 2017.
– Received 2019 IEEE Student Travel Award for ISMR 2019.
- **Amir Baghdadi**, PhD 2018 (Co-advised with Dr. Lora Cavuoto)
Current Position: Senior Machine Learning Engineer, Entefy, San Francisco, CA.
Dissertation: Application of Inertial Measurement Unit in Advanced Human Health and Safety Surveillance: A Data Fusion and Machine Learning Approach.

- Received 2017 UB MAE Teaching Fellowship Award.
- Received UB mark Diamond Research Fund.
- Received UB School of Management Student Entrepreneur Fellowship.

- **Amirhossein H. Memar**, PhD 2018

Current Position: Manager Research Scientist, Meta Reality Labs, Redmond, WA.

Dissertation: Enhancing Human-Robot Interaction with Passive Brain Computer Interface: A Neuroergonomic Approach.

- Received 2015 CIE Student Travel Award in IDETC 2015.
- **Mostafa Ghobadi**, PhD 2017
- Current Position: Senior Systems Analyst, Intuitive Surgical, San Francisco, CA.
- Dissertation: Physiological Signal Analysis for Home-based Activity Monitoring.
- Received VIB Student Travel Award in IDETC 2015.

MASTER STUDENTS–CURRENT

- **Tim Callahan** 8/2026–Now
Project: TBD.
- **Dylan Zelko** 6/2026–Now
Project: TBD.

MASTER STUDENTS–PAST

- **Jason Bieger** (2026)
Project: Automated denesting system for cheese packaging. Current Position: Mechanical Engineer, Apech Labs, Buffalo, NY.
- **Shubham Deomane** (2025), Project: Robotic packaging solution for Pharmaceutical applications. Current Position: Technical Program Manager at Auto-FC, Los Angeles, CA.
- **Pranoti Guruprasad Patwardhan** (2024), Project: Design of compliant fractal-based robotic gripper.
- **Sai Sharan Thirunagari** (2024), Thesis: Automated robotic solution for enhancing surfactant extraction from calf's lung. Current Position: Robotics Engineer, Meta Reality Labs, Seattle WA.
- **Ashish Kumar Singh** (2023), Thesis: Framework development and Data collection for human-in-the-loop and hardware-in-the-loop integrated simulation environment for urban air mobility applications. Current Position: Engineering Specialist, Caterpillar Inc., Clayton, NC.
– Received 2022 CIE Student Travel Award in IDETC 2022.
- **Kristian Dalland** (2022), Project: Gesture recognition for diver-robot interactions. Current Position: PhD Student, University at Buffalo, Buffalo NY.
- **Robert Lott** (2022), Project: A human-in-the loop simulation for manufacturing settings. Current Position: Aseptic Mentor, Grand Island, NY.
- **Yuhi Ji** (2022), Project: Vision-based object tracking objects for manipulation in confined space. Current Position: Aseptic Mentor, Grand Island, NY.
- **Supreet Kurdekar** (2021), Project: Enhancing human performance in assembly line using augmented reality. Current Position: Positioning and Control Engineer at Caterpillar, Peoria, IL.
- **Nihar Patel** (2021), Project: 6D object pose estimation for robot manipulation. Current Position: Project Engineer, TESLA Gigafactory, Sparks, NV.
- **Abhinaba Basu** (2021), Thesis: Active Ankle Foot Orthosis based on Variable Stiffness Actuators. Current Position: R&D Engineer, Natus Medical, San Diego, CA.
– Received 2020 CIE Student Travel Award in IDETC 2020.
- **Chaitanya B. Thammineni**, (2021), Thesis: Human in the loop learning through gaze augmentation. Current Position: Senior Software Engineer, Wisework, Bangaluru, India.

- **Rammya Arunachalam Iyer** (2021), Project: Object pose estimation and segmentation. Current Position: Associate Software Engineer at JPMorgan Chase, Seattle, WA.
- **Apurvakumar Jani** (2020), Thesis: Interactive shape control of robotic swarm using GIS based shape model. Current Position: Advanced Robotics Software Engineer, Symbotic, Boston, MA.
- **Rakesh Suresh Kumar** (2020), Thesis: Fatigue Detection in Human-Robot Collaboration. Current Position: Design Quality Engineer at Medtronics, Irvine, CA.
- **Abhikul Kumar Singh** (2020), Project: Design Modification of Magnetic Gripper Mechanism based on ISO/TS 15066. Current Position: Manufacturing Engineer at Zimmer Biomet, Warsaw, IN.
- **Kuber Reddy Gorantla** (2018) Thesis: Classification of motor control features for surgical skill assessment in robotic assisted surgery. Current Position: Senior Research Scientist, Siemens, Princeton NJ.
- **Ajaipal Singh Chhina** (2018), Project: Augmented reality for 3D CAD object creation. Current Position: System Data Engineer, Zoox, San Francisco, CA.
- **Peeyush Firodiya** (2018), Project: Simulation of automated pick and place in convenient stores. Current Position: New product Development Team Lead, Crane ChemPharma & Energy, Cincinnati, OH.
- **Jingzhi Wang** (2017), Thesis: A semi-automatic cell boundary and adherens junction layers detection using Level Set method. Current Position: Software Engineer Wyze Labs, Seattle, WA.
- **Sivakiran Ayyagari** (2017), Thesis: Classification of task difficulty in free hand movements via brain computer interface. Current Position: Software Developer II at ANSYS Inc., Pittsburgh, PA.
- **Sri Sadhan Jujjavarapu** (2017), Thesis: Design of a 2D Haptic System with Passive Variable Stiffness using Permanent Magnets for Upper-Limb Rehabilitation. Current Position: PhD Student, University at Buffalo, Buffalo, NY.
- **Amit N. Mana** (2017), Thesis: Multimodal human interface using sketch, speech and brain data in Computer Aided Design. Current Position: AI Engineer at Elevance Health, Paolo Alto, CA.
- **Fei Chen** (2017), Thesis: Augmented Reality for Workforce Training. Current Position: Hardware Engineer, at ServiceNow, Dallas TX.
- **Yuxiang Chen** (2017), Project: Ground Reaction Force Estimation in Gait using Wearable Sensors. Current Position: Software Engineer, LinkedIn., San Francisco CA.
- **Yang Yu** (2016), Thesis: Sketch Based Tutorial System for Drawing Free Body Diagram.
- **Hongfei Lin** (2015), Project: Design of a Variable Stiffness Gripper. Current Position: Mechanical Design Engineer, ASM, Chengdu, Sichuan, China
- **Zhiqing Zhao** (2015), Thesis: 3D Mesh Segmentation with SVM and Boundary Correction. Current Position: Business Analyst, Anthem Healthcare Inc., Elkridge, MD.
- **Azadeh DinparastDjadid** (2015), Thesis: Spike Sorting via Multi Cluster Feature Selection. Current Position: Senior Research Scientist at Waymo, Mountain View, CA.
- **Shrey Pareek** (2015), Thesis: Cognitive Adaptation for Human Computer Interaction. Current Position: Computer Vision Lead Scientist at Cargill (Adjunct Professor at St. Thomas University, Minneapolis MN).
- **Po Sheng Wang** (2015), Thesis: Kernel Based Support Vector Machine for Human Emotion Detection. Current Position: Software Engineer, Thomson Reuters, Dallas, TX.
- **Vaibhav Sharma** (2015), Project: 3D Printing Parameter Selection and Design for non-Expert users. Current Position: Staff Mechanical Engineer at NPI, Hayward, CA.
- **Chen Qian** (2014), Project: Controlling Google Glass via Brain Activity. Current Position: China Sale Leader at Baker Hughes, Shanghai, China.

- **Rohit Bhat** (2014), Thesis: Using brain activity for ambiguity reduction of touch-based gestures in 3D CAD environment. Current Position: Mechanical Design Engineer at Powerside, Vancouver, BC.

UNDERGRADUATE STUDENTS–PAST

Sabrina Johnson, B.S Computer Science and Engineering, CSTEP Internship in Summer 2024.

Robert Lian, B.S. Mechanical Engineering. Summer 2022-Spring 2023.

Joseph Distefano (2018–2019), Current Position: PhD. Student, University at Buffalo.

– Received Undergraduate Research and Creative Activities Grant.

Joaquin L. Diez (2017), Current Position: Industrial Engineer, Innsbruck, Tyrol Austria.

Margaret Lawn (2013–2015), Current Position: Guidance Navigation and Control Engineer JHU Applied Physics Lab., Laurel, MD.

– Received 2014 Research and Creativity Scholarship from UB Honor College.

Brian Le Folch (2013–2015), Current Position: Flight Dynamics and Simulation Engineer, Overair, Tuscan AZ.

– Received 2014 Research and Creativity Scholarship from UB Honor College.

– Received 2015 SUNY Chancellors Award for Student Excellence.

Chameseddine Mballo, (2013–2015), Current Position: Post-Doctoral Fellow at UC Berkeley, CA.

– Received 2014 Zimmer Award.

– Received 2014 Research and Creativity Scholarship from UB Honor College.

– Received 2015 SUNY Chancellors Award for Student Excellence.

Yi Jui Lee, (2015–2016), Current Position: Graduate Student, University of British Columbia.

– Received 2015 UB Undergraduate Awards for Excellence in Research, Scholarship and Creativity.

James Rogers (2013), Current Position: Senior Product Engineer, MAHLE Manufacturing, Buffalo NY.

Frank Repetti (2013–14) Current Position: Senior Design Engineer, Eaton Mission Systems, Buffalo NY.

MEMBER OF GRADUATE STUDENT COMMITTEES:

29 PhD Dissertations, 37 MS Thesis and 9 MS Projects

PhD Student	Defense Date	PhD Advisor	Department
1-Jinmiao Huang	9/2015	R. Rai	Mechanical Engineering
2-Dipanjan Dipak Ghosh	2/2016	K. Lewis	Mechanical Engineering
3-Muath Banihani	9/2016	A. Karami	Mechanical Engineering
4-Mojdeh Pajoutan	12/2016	L. Cavuto	Industrial and System Eng.
5-Mohammad Mehdi Maneshi	7/2017	S. Hua	Mechanical Engineering
6-Prakhar Jaiswal	9/2018	R. Rai	Mechanical Engineering
7-Binbin Zhang	9/2018	R. Rai	Mechanical Engineering
8-Hooman Ansari	9/2018	A. Karami	Mechanical Engineering
9-Jun Wang	1/2019	R. Rai	Mechanical Engineering
10-Maira Saboia	7/2019	N. Napp	Computer Science & Eng.
11-Payam Ghasemi	12/2020	S. Chowdhury	Mechanical Engineering
12-Mohammad Attarzadeh	2/2021	M. Nouh	Mechanical Engineering
13-Zhibo Zhang	5/2021	R. Rai	Mechanical Engineering
14-Amir Behjat	5/2021	S. Chowdhury	Mechanical Engineering
15-Saeb Ragani Lamooki	1/2022	J. Kang	Mechanical Engineering
16-Chen Zeng	5/2022	S. Chowdhury	Mechanical Engineering
17-Steve Paul	12/2023	S. Chowdhury	Mechanical Engineering
18-Tasnim Shireen	05/2024	S. Hua	Mechanical Engineering
19-Prajit Kumar	12/2024	S. Chowdhury	Mechanical Engineering
20-Manaswin Oddiraju	12/2024	S. Chowdhury	Mechanical Engineering

21-Vashin G. Nanjangud Thyagaraja	TBD	J. Liu	Mechanical Engineering
22-Eric Mountain	TBD	T. Sing	Mechanical Engineering
23-Audra Smith	TBD	R. St. Pierre	Mechanical Engineering
24-Nathan Maurer	TBD	S. Chowdhury	Mechanical Engineering
25-Aditya Divyakant Bhatt	TBD	S. Chowdhury	Mechanical Engineering
26-Prithvi Dibyendu Poddar	TBD	S. Chowdhury	Mechanical Engineering
26-Sen Jiang	TBD	C. He	Mechanical Engineering
27-Mohammed Gayasuddin Shaik	TBD	K. Lichade	Mechanical Engineering
28-Aneesh Krishna	TBD	A. N. Ford Versypt	Comp. and Data Sciences
29-Abhishek Sharma	TBD	M. Bichuch	Mathematics

MS THESIS: 1-Dipen H. Dave (Jan. 13), 2-Jinmiao Huang (May 13), 3-Pramod Chembrammel (June 13), 4-Sudhanshu Rathod (July 13), 5-Aditya R. Ashammagari (Aug. 13), 6-Ravikiran Chollangi (Aug. 14), 7-Aditya Thakur (Aug. 14), 8-Sree Shankar (Aug. 14), 9-Karthik Yerrapragada (July 15), 10-Yao Li (Aug. 15), 11-Nikhil S. Pillai (May 16), 12-Sanchit K. Gupta (July 17), 13-Save Paul (July 17), 14-Jamie Asbach (May 18), 15-Sidharth Sher (Aug. 18), 16-Aditya P. Khadilkar (Aug. 18), 17-Sharat P. Chidambaram (Aug. 18), 18-MohammadReza Bahrani Fard (Aug. 19), 19-Maulik Dhameliya (Aug. 19), 20-Krushang Gabani (Dec. 19), 21-Leighton Collins (May 20), 22-Chrystal Yang (May 20), 23-Prajit Krishna Kumar (July 21), 24-Dhruv Patel (Aug. 21), 25-Haidar Alsalihi (Aug. 21), 26-Wenyuan Li (Jan. 22), 27-Gerald Kalloor Antony (Jan. 22), 28-Josh Prendergast (May 22), 29-Nathan Maurer (Dec. 22), 30-Jhoel Witter (Dec. 22), 31-Aditya Divyakant Bhatt (Dec. 23), 32-Haosong Xiao (Dec. 23), 33-Ean Weise (Aug. 24), 34-Bharath Varma Penumatsa (Dec. 24), 35-Urvish Shah (Dec. 25), 36-Yagmur Aykanat (May 26), 37-Kris Kodweis (May 26)

MS PROJECTS: 1-Akshay Deshpande (Aug. 14), 2-Azhar Vellor (Dec. 14), 3-Nianteng Feng (Dec. 14), 4-Habib M. Younus (Dec. 14), 5-Junqing Deng (Aug. 15), 6-Kiran B. Koyalamudi (Dec. 15), 7-Benjamin Kuch (Dec. 15), 8-Hamlet Spencer (May 17), 9-Vashin Gautham Nanjangud Thyagaraja (June 23).

COURSE TAUGHT

(The overall instructor score is shown as semester/score for the past 10 years.)

UNIVERSITY AT BUFFALO

- **MAE 509** Probability and Stochastic Process (**4.9**)
Evaluation: F24/NA, F23/NA, F22/4.9, F21/4.9, F20/NA, F19/5, F18/4.7
- **MAE 464/564** Manufacturing Automation (**4.61**)
Evaluation: F24/4.5, F23/4.5, F22/5, F21/4.9, F20/4.4, F19/4.4, F18/4.6, F17/4.5, F16/4.7
- **MAE 527** Intelligent CAD Interfaces (**4.8**)
Evaluation: S22/5, S18/4.9, S16/4.8, S14/4.5, Spring 13 (3.71/5).
- **MAE 502** Human-Robot Interaction (**4.6**)
Evaluation: S23/4.9, S21/NA, S19/4.2
- **EAS 502** Intro. to Probability for CDSE (**4.33**)
Evaluation: F24/4.1, F23/4.5, S23/4.8, F22/4.4, S22/4.2, F21/4.4, S21/4.2, F20/4, F19/3.8, F18/4.9.
- **MAE 477/577** CAD Applications (**4.6**)
Evaluation: S17/4.7, S16/4.4, S15/4.7
- **MAE 376** Mathematical Methods for MAE (**4.4**)
Evaluation: F17/4.4, F16/4.7, F15/4.1.

UNIVERSITY OF CALIFORNIA RIVERSIDE

- **ME 001** Introduction to Mechanical Engineering - Fall 2011.

PROFESSIONAL AFFILIATIONS

Senior Member, Institute of Electrical and Electronics Engineers (IEEE).

Member, American Society for Mechanical Engineers (ASME).

Member, Association for Advancement of Artificial Intelligence (AAAI).

Member, American Association for the Advancement of Science (AAAS).