BYUNG-CHEOL MIN

Associate Professor and University Faculty Scholar
Director, SMART Laboratory
Purdue University

CONTACT INFORMATION

Department of Computer and Information Technology
Polytechnic Institute
Purdue University
Knoy Hall #245
401 N. Grant Street, West Lafayette, IN 47907, USA

Office: +1 (765) 494–6490
Fax: +1 (765) 496–1212
E-mail: minb@purdue.edu
http://web.ics.purdue.edu/ minb/
http://www.smart-laboratory.org

BRIEF RESEARCH STATEMENT

I am a roboticist. I conduct both basic and applied research on robotics with regard to its scientific and engineering aspects, and combine practical and theoretical approaches to solve real-world problems. **My research interests stand at the intersection of human-robot interaction and multi-robot systems, and I explore problems of planning and control, algorithms, and robot learning in these areas and apply them to field robotics and to assistive technology and robotics.** I have worked on designing algorithms and systems to enable multiple robots to collaborate with each other in a distributed way and to work with humans as a multi-human-multi-robot team. I have also studied how learning methods can enable robots to flexibly interact with any humans, in any situation, anywhere.

Keywords: Robotics, Multi-Robot Systems, Human-Robot Interaction, Robot Learning, and Field Robotics

EDUCATION

Post-Doc, The Robotics Institute — June 2014 – July 2015
Carnegie Mellon University, Pittsburgh, PA, USA

Ph.D., **Computer and Information Technology** (Specialization: Robotics) — May 2014
Purdue University, West Lafayette, IN, USA

M.S., **Electronics and Radio Engineering** (Specialization: Automatic Control) — Aug 2010
Kyung Hee University, Yongin, Korea

B.S., **Electronics Engineering** — Aug 2008
Kyung Hee University, Yongin, Korea

PROFESSIONAL EXPERIENCE

Associate Professor and University Faculty Scholar — Aug 2020 – Present
Department of Computer and Information Technology, Polytechnic Institute, Purdue University, West Lafayette, IN, USA

Assistant Professor — Aug 2015 – Aug 2020
Department of Computer and Information Technology, Polytechnic Institute, Purdue University, West Lafayette, IN, USA

Postdoctoral Researcher — June 2014 – July 2015
Field Robotics Center, The Robotics Institute, School of Computer Science, Carnegie Mellon University, Pittsburgh, PA, USA

Sergeant — July 2001 – Sept 2003
Air Operations Command, Republic of Korea Army (ROKA), Icheon, Korea

HONORS AND AWARDS

- **Senior Member**, IEEE (Institute of Electrical and Electronics Engineers) 2023
- **Corps of Engagement Award**, Office of Engagement, Purdue University 2022
- **Excellent Paper Award**, IEEE IROS 2021 Workshop on Cognitive and Social Aspects of Human Multi-Robot Interaction 2022
- **University Faculty Scholar**, Purdue University 2021
- **Interdisciplinary Research Collaboration Award**, Polytechnic Institute, Purdue University 2021
- **Outstanding Faculty Award in Discovery (Research)**, Department of Computer and Information Technology, Purdue University 2021
- **Finalist** in the NASA Space Robotics Challenge Phase 2, NASA 2021
- **Focus Award**, Office of Institutional Equity, Purdue University 2020
- **NSF CAREER Award**, National Science Foundation 2019
- **Outstanding Faculty Award in Discovery (Research)**, Polytechnic Institute, Purdue University 2019
- **Outstanding Graduate Faculty Mentor Award**, Department of Computer and Information Technology, Purdue University 2019
- **Outstanding Faculty Award in Discovery (Research)**, Department of Computer and Information Technology, Purdue University 2019
- **Purdue Seed for Success Award**, Purdue University 2018
- **Purdue Research Foundation (PRF) Summer Faculty Award for Research**, Purdue University 2017
- **Best Paper Award**, ICROS (Institue of Control, Robotics and Systems) Annual Conference 2013
- **Best Paper Award**, KIIS (Korean Institute of Intelligent System) Spring Conference 2009
- **Best Thesis Award**, Kyung Hee University 2008
- **Useful Idea Award**, Korean Ministry of Health and Welfare 2007

PUBLICATIONS

Journal Articles

[1] Ruiqi Wang*, Wonse Jo*, Dezhong Zhao, Weizheng Wang, Baijian Yang, Guohua Chen, and Byung-Cheol Min (*equal contribution), **"Husformer: A Multi-Modal Transformer for Multi-Modal Human State Recognition"**, *IEEE Transactions on Cognitive and Developmental Systems*, Early Access, 2024.

[2] Ruiqi Wang*, Dezhong Zhao*, Arjun Gupte, and Byung-Cheol Min (*equal contribution), **"Initial Task Assignment in Multi-Human Multi-Robot Teams: An Attention-enhanced Hierarchical Reinforcement Learning Approach"**, *IEEE Robotics and Automation Letters*, Vol. 9, No. 4, pp. 3451-3458, April 2024.

[3] Geunsu Kim, Soohyeok Kang, Gyudo Park, and Byung-Cheol Min, **"Electric Vehicle Battery State Of Charge Prediction Based On Graph Convolutional Network"**, *International Journal of Automotive Technology*, Vol 24, pp. 1519-1530, 2023.

[4] Upinder Kaur, Victor M. R. Malacco, Huiwen Bai, T. P. Price, Arunashish Datta, Lei Xin, Shreyas Sen, Robert A. Nawrocki, George Chiu, Shreyas Sundaram, Byung-Cheol Min, Kristy M. Daniels, Robin R. White, Shawn S. Donkin, Luiz F. Brito, and Richard M. Voyles, **"Invited Review: Integration of Technologies and Systems for Precision Animal Agriculture – A Case Study on Precision Dairy Farming"**, *Journal of Animal Science*, skad206, June 2023.

[5] Ramviyas Parasuraman, Byung-Cheol Min, and Petter Ögren, **"Rapid Prediction of Network Quality in Mobile Robots"**, *Ad Hoc Networks*, Vol. 138, 103014, January 2023.

[6] Oscar Wong Chong, Jiansong Zhang, Richard M. Voyles, and Byung-Cheol Min, **"BIM-based Simulation of Construction Robotics in the Assembly Process of Wood Frames"**, *Automation in Construction*, Vol. 137, 104194, May 2022.

[7] Hyeonghun Kim, Molly Rothschild, Dong Hun Lee, Chung Soo Kim, Jeongmin Park, Byung-Cheol Min, and Sunghwan Lee , **"Bias-Switchable Photodetector from Broad-Band to UV-Selective Detection Mode Leveraging Nanolayered Dual-Schottky Junction"**, *ACS Applied Nano Materials*, November 2022.

[8] Dongming Gan, Jiaming Fu, Han Lin, Haoguang Yang, Mo Rastgaar, Byung-Cheol Min, Richard Voyles, **"Actuation-Coordinated Mobile Parallel Robots with Hybrid Mobile and Manipulation Function"**, *Transactions of the ASME, Journal of Mechanisms and Robotics*, Vol. 14, No. 4, 041005, August 2022.

[9] Shaocheng Luo, Jonghoek Kim, and Byung-Cheol Min, **"Asymptotic Boundary Shrink Control with Multirobot Systems"**, *IEEE Transactions on Systems, Man, and Cybernetics: Systems*, Vol. 52, No. 1, pp. 591-605, Jan. 2022.

[10] Hyeonghun Kim, Molly Rothschild, Kwangdong Roh, Yunseok Kim, Ho Seong Jang, Byung-Cheol Min, and Sunghwan Lee, **"Hybrid Silicon-Polymer Photodetector Engineered Using Oxidative Chemical Vapor Deposition for High-Performance and Bias-Switchable Multi-Functionality"**, *Advanced Functional Materials*, 2022.

[11] Manoj Penmetcha and Byung-Cheol Min, **"A Deep Reinforcement Learning-based Dynamic Computational Offloading Method for Cloud RoboticsVo"**, *IEEE Access*, Vol. 9, pp. 60265-60279, 2021.

[12] Jun Han Bae, Wonse Jo, Jee Hwan Park, Richard M. Voyles, Sara K. McMillan, and Byung-Cheol Min, **"Evaluation of Sampling Methods for Robotic Sediment Sampling Systems"**, *IEEE Journal of Oceanic Engineering*, Vol. 46, No. 2, pp. 542-554, April 2021.

[13] Ahreum Lee, Wonse Jo, Shyam Sundar Kannan, and Byung-Cheol Min, **"Investigating the Effect of Deictic Movements of a Multi-robot"**, *International Journal of Human-Computer Interaction*, Vol 37, No. 3, pp. 197-210, 2021.

[14] Tamzidul Mina, Shyam Sundar Kannan, Wonse Jo, and Byung-Cheol Min, **"Adaptive Workload Allocation for Multi-human Multi-robot Teams for Independent and Homogeneous Tasks"**, *IEEE Access*, Vol. 8, pp. 152697-152712, 2020.

[15] Tamzidul Mina, Yogang Singh, and Byung-Cheol Min, **"Maneuvering Ability-Based Weighted Potential Field Framework for Multi-USV Navigation, Guidance and Control"**, *Marine Technology Society Journal*, Vol. 54, No. 4, pp. 40-58, 2020.

[16] Patchara Kitjacharoenchai, Byung-Cheol Min, and Seokcheon Lee, **"Two Echelon Vehicle Routing Problem with Drones in Last Mile Delivery"**, *International Journal of Production Economics*, Vol. 25, July 2020.

[17] Ho Young Jeong, David J. Yu, Byung-Cheol Min, and Seokcheon Lee, **"The Humanitarian Flying Warehouse"**, *Transportation Research Part E: Logistics and Transportation Review*, Vol. 136, April 2020.

[18] Ramviyas Parasuraman*, Jonghoek Kim*, Shaocheng Luo, and Byung-Cheol Min (*equal contribution), **"Multipoint Rendezvous in Multirobot Systems"**, *IEEE Transactions on Cybernetics*, Vol. 50, No. 1, pp. 310-323, Jan. 2020.

[19] Wonse Jo, Yuta Hoashi, Lizbeth Leonor Paredes Aguilar, Mauricio Postigo-Malaga, José Garcia-Bravo, and Byung-Cheol Min, **"A Low-cost and Small USV Platform for Water Quality Monitoring"**, *HardwareX*, Vol. 6, e00076, October 2019.

[20] Min Ku Kim, Ramviyas Nattanmai Parasuraman, Liu Wang, Yeonsoo Park, Bongjoong Kim, Seung Jun Lee, Nanshu Lu, Byung-Cheol Min, and Chi Hwan Lee, **"Soft-packaged Sensory Glove System for Human-like Natural Interaction and Control of Prosthetic Hands"**, *NPG Asia Materials*, Vol. 11, Article Number 43, August 2019.

[21] Shaocheng Luo, Jonghoek Kim, Ramviyas Parasuraman, Jun Han Bae, Eric T. Matson, and Byung-Cheol Min, **"Multi-robot Rendezvous Based on Bearing-aided Hierarchical Tracking of Network Topology"**, *Ad Hoc Networks*. Vol. 86, pp. 131-143, April 2019.

[22] Yazeed Albabtain, Baijian Yang, J. Eric Dietz, Byung-Cheol Min, Dmitri A. Gusev, **"Survey of GPU Vulnerabilities and Foresic Science"**, *Technology Interface International Journal*, Vol. 19, No. 1, Fall/Winter 2018.

[23] Miae Kim, Inseok Koh, Hyewon Jeon, Jiyoung Choi, Byung-Cheol Min, Eric T. Matson, and John Gallagher, **"A HARMS-based Heterogeneous Human-Robot Team for Gathering and Collecting"**, *Advances in Robotics Research*, Vol. 2, No 3, pp 201-217, September 2018.

[24] Mythra Vsm Balakuntala, Mustafa Ayad, Richard M. Voyles, Robin White, Robert Nawrocki, Shreyas Sundaram, Shashank Priya, George Chiu, Shawn Donkin, Byung-Cheol Min, and Kristy Daniels,**"Global Sustainability through Closed-Loop Precision Animal Agriculture"**, *Mechanical Engineering Magazine Select Articles*, Vol. 140, No. 06, S19-S23, June 2018.

[25] Byung-Cheol Min, Ramviyas Parasuraman, Sangjun Lee, Jin-Woo Jung, and Eric T. Matson, **"A Directional Antenna based Leader-Follower Relay System for End-to-End Robot Communications"**, *Robotics and Autonomous Systems*, Vol. 101, pp. 57-73, March 2018.

[26] Daniel K. Schrader, Byung-Cheol Min, Eric T. Matson, and J. Eric Dietz, **"Real-time averaging of position data from multiple GPS receivers"**, *Measurement*, Vol. 90, pp. 329-337, August 2016.

[27] Byung-Cheol Min, Eric T. Matson, and Jin-Woo Jung, **"Active Antenna Tracking System with Directional Antennas for Enhancing Wireless Communication Capabilities of a Networked Robotic System"**, *Journal of Field Robotics*, Vol. 33, No. 3, pp. 391-406, May 2016.

[28] Byung-Cheol Min, Yongho Kim, Sangjun Lee, Jin-Woo Jung, and Eric T. Matson **"Finding the Optimal Location and Allocation of Relay Robots for Building a Rapid End-to-end Wireless Communication"**, *Ad Hoc Networks*, Vol. 39, pp. 23-44, March 2016.

[29] Byung-Cheol Min, Eric T. Matson, Jinung An, and Donghan Kim, **"Improvement of Violinist Robot using a Passive Damper Device"**, *Journal of Intelligent and Robotic Systems*, Vol. 72, No. 3-4, pp. 343-355, Dec. 2013.

[30] Byung-Cheol Min, John Lewis, Eric T. Matson, and Anthony H. Smith, **"Heuristic Optimization Techniques for Self-orientation of Antennas in Long-distance Point-to-point Broadband Networks"**, *Ad Hoc Networks*, Vol. 11, No. 8, pp. 2252-2263, Nov. 2013.

[31] John Lewis, Eric T. Matson, Sherry Wei, and Byung-Cheol Min, **"Implementing HARMS-based Indistinguishability in Ubiquitous Robot Organizations"**, *Robotics and Autonomous Systems*, Vol. 61, No. 11, pp. 1186-1192, Nov. 2013.

[32] Dong-Hoe Kim, Byung-Cheol Min, and Donghan Kim, **"A Dust Detection Sensor System for Improvement of a Robot Vacuum Cleaner"**, *Journal of Institute of Control, Robotics and Systems*, Oct. 2013.

[33] Cory Q. Nguyen, Byung-Cheol Min, Eric T. Matson, Anthony H. Smith, J. Eric Dietz, and Donghan Kim, **"Using Mobile Robots to Establish Mobile Wireless Mesh Networks and Increase Network Throughput"**, *International Journal of Distributed Sensor Networks*, Vol. 2012, Article ID 614532, 2012.

[34] Byung-Cheol Min, Moon-Su Kim, and Donghan Kim, **"Fuzzy Logic Path Planner and Motion Controller by Evolutionary Programming for Mobile Robots"**, *International Journal of Fuzzy Systems*, Vol. 11, No. 3, pp. 154-163, Sep. 2009.

[35] Byung-Cheol Min, Donghan Kim, Yoon Hyuk Kim, Ki Yeoul Kim, and Chongkug Park, **"Development of Violin Self-Training Algorithm Using Fuzzy Logic"**, *Journal of Korean Institute of Intelligent Systems*, Vol. 19, No. 4, Aug. 2009.

Conference Proceedings

[1] Weizheng Wang, Le Mao, Ruiqi Wang, and Byung-Cheol Min, **"Multi-Robot Cooperative Socially-Aware Navigation using Multi-Agent Reinforcement Learning"**, *IEEE International Conference on Robotics and Automation (ICRA)*, Yokohama, Japan, May 13-17, 2024. (Accepted)

[2] Tamzidul Mina, Wonse Jo, Shyam Sundar Kannan, and Byung-Cheol Min, **"Beacon-based Distributed Structure Formation in Multi-agent Systems"**, *2023 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS 2023)*, Detroit, USA, October 1-5, 2023.

[3] Ruiqi Wang, Dezhong Zhao, and Byung-Cheol Min, **"Initial Task Allocation for Multi-Human Multi-Robot Teams with Attention-based Deep Reinforcement Learning"**, *2023 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS 2023)*, Detroit, USA, October 1-5, 2023.

[4] Shyam Sundar Kannan, L.N Vishnunandan Venkatesh, Revanth Krishna Senthilkumaran, and Byung-Cheol Min, **"UPPLIED: UAV Path Planning for Inspection through Demonstration"**, *2023 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS 2023)*, Detroit, USA, October 1-5, 2023.

[5] Go-Eum Cha, Wonse Jo, and Byung-Cheol Min, **"Implications of Personality on Cognitive Workload, Affect, and Task Performance in Robot Remote Control"**, *2023 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS 2023)*, Detroit, USA, October 1-5, 2023.

[6] Weizheng Wang, Ruiqi Wang, Le Mao, and Byung-Cheol Min, **"NaviSTAR: Socially Aware Robot Navigation with Hybrid Spatio-Temporal Graph Transformer and Preference Learning"**, *2023 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS 2023)*, Detroit, USA, October 1-5, 2023.

[7] Ruiqi Wang, Weizheng Wang, and Byung-Cheol Min, **"Feedback-efficient Active Preference Learning for Socially Aware Robot Navigation"**, *2022 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS 2022)*, Kyoto, Japan, October 23-27, 2022.

[8] Shyam Sundar Kannan and Byung-Cheol Min, **"Autonomous Drone Delivery to Your Door and Yard"**, *2022 International Conference on Unmanned Aircraft Systems (ICUAS)*, Dubrovnik, Croatia, June 21-24, 2022.

[9] Kwonsik Song, Kyubyung Kang, and Byung-Cheol Min, **"Recognition of Occupants' Cold Discomfort-Related Actions for Energy-Efficient Buildings"**, *The 9th International Conference on Construction Engineering and Project Management*, Las Vegas, NV, USA, June 20-23, 2022.

[10] Upinder Kaur, Xin Ma, Richard M. Voyles, and Byung-Cheol Min, **"Malware Detection Using Pseudo Semi-Supervised Learning"**, *3rd International Conference on Pattern Recognition and Artificial Intelligence (ICPRAI 2022)*, Paris, France, 1-3 June, 2022.

[11] Go-Eum Cha and Byung-Cheol Min, **"Correlation between Unconscious Mouse Actions and Human Cognitive Workload"**, *2022 ACM CHI Conference on Human Factors in Computing Systems - Late-Breaking Work*, New Orleans, LA, USA, April 30–May 6, 2022.

[12] Upinder Kaur, Haozhe Zhou, Xiaxin Shen, Byung-Cheol Min, and Richard M. Voyles, **"RoboMal: Malware Detection for Robot Network Systemsh"**, *2021 IEEE Robotic Computing (IRC)*, Taichung, Taiwan, November 15-17, 2021.

[13] Shyam Sundar Kannan and Byung-Cheol Min, **"Investigation on Accepted Package Delivery Location: A User Study-based Approach"**, *2021 IEEE International Conference on Systems, Man, and Cybernetics (SMC)*, Virtual, Melbourne, Australia, 17-20 October, 2021.

[14] Manoj Penmetcha, Shyam Sundar Kannan, and Byung-Cheol Min, **"A Predictive Application Offloading Algorithm using Small Datasets for Cloud Robotics"**, *2021 IEEE International Conference on Systems, Man, and Cybernetics (SMC)*, Virtual, Melbourne, Australia, 17-20 October, 2021.

[15] Dongming Gan, Jiaming Fu, Mo Rastgaar, Byung-Cheol Min, and Richard Voyles, **"Actuation-Coordinated Mobile Parallel Robots with Hybrid Mobile and Manipulation Function"**, *ASME 2021 International Design Engineering Technical Conferences & Computers and Information in Engineering Conference (IDETC-CIE 2021)*, Virtual, 17–20 August, 2021.

[16] Shyam Sundar Kannan, Ahreum Lee, and Byung-Cheol Min, **"External Human-Machine Interface on Delivery Robots: Expression of Navigation Intent of the Robot"**, *2021 30th IEEE International Conference on Robot & Human Interactive Communication (RO-MAN)*, Virtual, Vancouver, Canada, 8-12 August, 2021.

[17] Shyam Sundar Kannan, Wonse Jo, Ramviyas Parasuraman, and Byung-Cheol Min, **"Material Mapping in Unknown Environments using Tapping Sound"**, *2020 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*, Las Vegas, NV, USA, October 25-29, 2020.

[18] Manoj Penmetcha, Shyam Sundar Kannan, and Byung-Cheol Min, **"Smart Cloud: Scalable Cloud Robotic Architecture for Web-powered Multi-Robot Applications"**, *2020 IEEE International Conference on Systems, Man and Cybernetics (SMC)*, Toronto, Canada, 11-14 October, 2020.

[19] Wonse Jo, Shyam Sundar Kannan, Go-Eum Cha, Ahreum Lee, and Byung-Cheol Min, **"ROSbag-based Multimodal Affective Dataset for Emotional and Cognitive States"**, *2020 IEEE International Conference on Systems, Man and Cybernetics (SMC)*, Toronto, Canada, 11-14 October, 2020.

[20] Tamzidul Mina, Yogang Singh, and Byung-Cheol Min, **"A Novel Double Layered Weighted Potential Field Framework for Multi-USV Navigation towards Dynamic Obstacle Avoidance in a Constrained Maritime Environment"**, *2019 MTS/IEEE OCEANS*, Seattle, WA, USA, October 27-31, 2019.

[21] Wonse Jo, Jee Hwan Park, Yuta Hoashi, and Byung-Cheol Min, **"Development of an Unmanned Surface Vehicle for Harmful Algae Removal"**, *2019 MTS/IEEE OCEANS*, Seattle, WA, USA, October 27-31, 2019.

[22] Shaocheng Luo, Yogang Singh, Hanyao Yang, Jun Han Bae, J. Eric Dietz, Xiumin Diao, and Byung-Cheol Min, **"Image Processing and Model-Based Spill Coverage Path Planning for Unmanned Surface Vehicles"**, *2019 MTS/IEEE OCEANS*, Seattle, WA, USA, October 27-31, 2019.

[23] Jun Han Bae, Shaocheng Luo, Shyam Sundar Kannan, Yogang Singh, Bumjoo Lee, Richard M. Voyles, Mauricio Postigo-Malaga, Edgar Gonzales Zenteno, Lizbeth Paredes Aguilar, and Byung-Cheol Min, **"Development of an Unmanned Surface Vehicle for Remote Sediment Sampling with a Van Veen Grab Sampler"**, *2019 MTS/IEEE OCEANS*, Seattle, WA, USA, October 27-31, 2019.

[24] Jee Hwan Park, Tamzidul Mina, and Byung-Cheol Min, **"Grid-based Cyclic Robot Allocation for Object Carrying"**, *2019 IEEE International Conference on Systems, Man and Cybernetics (SMC)*, Bari, Italy, 6-9 October, 2019.

[25] Manoj Penmetcha, Shaocheng Luo, Arabinda Samantaray, J. Eric Dietz, Baijian Yang, and Byung-Cheol Min, **"Computer Vision-based Algae Removal Planner for Multi-robot Teams"**, *2019 IEEE International Conference on Systems, Man and Cybernetics (SMC)*, Bari, Italy, 6-9 October, 2019.

[26] Tamzidul Mina, Maliha Hossain, Jee Hwan Park, and Byung-Cheol Min, **"Efficient Resource Distribution by Adaptive Inter-agent Spacing in Multi-agent Systems"**, *2019 IEEE International Conference on Systems, Man and Cybernetics (SMC)*, Bari, Italy, 6-9 October, 2019.

[27] Yuting Chen, Jiansong Zhang, and Byung-Cheol Min, **"Applications of BIM and UAV to Construction Safety"**, 7th CSCE International Construction Specialty Conference, Laval, QC, Canada, June 12-15, 2019.

[28] Wonse Jo, Jee Hwan Park, Sangjun Lee, Ahreum Lee, and Byung-Cheol Min, **"Design of a Human Multi-Robot Interaction Medium of Cognitive Perception"**, *2019 ACM/IEEE International Conference on Human-Robot Interaction - Late-Breaking Reports (LBR)*, Daegu, South Korea, March 11-14, 2019.

[29] Shaocheng Luo, Jun Han Bae, and Byung-Cheol Min, **"Pivot-based Collective Coverage Control with a Multi-robot Team"**, *2018 IEEE International Conference on Robotics and Biomimetics (IEEE ROBIO 2018)*, Kuala Lumpur, Malaysia, December 12-15, 2018.

[30] Tamzidul Mina and Byung-Cheol Min, **"Penguin Huddling Inspired Distributed Boundary Movement for Group Survival in Multi-robot Systems using Gaussian Processes"**, *2018 IEEE International Conference on Robotics and Biomimetics (IEEE ROBIO 2018)*, Kuala Lumpur, Malaysia, December 12-15, 2018.

[31] Ramviyas Parasuraman and Byung-Cheol Min, **"Consensus Control of Distributed Robots Using Direction of Arrival of Wireless Signals"**, *International Symposium on Distributed Autonomous Robotic Systems 2018 (DARS 2018)*, Boulder, CO, USA, Oct 15-17, 2018.

[32] Sangjun Lee and Byung-Cheol Min, **"Distributed Direction of Arrival Estimation-aided Cyberattack Detection in Networked Multi-Robot Systems"**, *2018 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS 2018)*, Madrid, Spain, October 1-5, 2018.

[33] Ramviyas Parasuraman, Petter Ögren, and Byung-Cheol Min, **"Kalman Filter based Spatial Prediction of Wireless Connectivity for Autonomous Robots and Connected Vehicles"**, *2018 IEEE Connected and Automated Vehicles Symposium (CAVS)*, Chicago, USA, August 27, 2018.

[34] Tamzidul Mina and Byung-Cheol Min, **"Penguin Huddling-inspired Energy Sharing and Formation Movement in Multi-robot Systems"**, *2018 IEEE International Symposium on Safety, Security, and Rescue Robotics (SSRR)*, Philadelphia, PA, USA, August 6-8, 2018.

[35] Yeonju Oh, Ramviyas Parasuraman, Tim McGraw, and Byung-Cheol Min, **"360 VR Based Robot Teleoperation Interface for Virtual Tour"**, *The 13th Annual ACM/IEEE International Conference on Human Robot Interaction (HRI), Workshop on Virtual, Augmented, and Mixed Reality for Human-Robot Interactions (VAM-HRI)*, Chicago, Illinois, USA, March 5, 2018.

[36] Sangjun Lee, Yongbum Cho, and Byung-Cheol Min, **"Attack-aware Multi-sensor Integration Algorithm for Autonomous Vehicle Navigation Systems"**, *2017 IEEE International Conference on Systems, Man and Cybernetics (SMC)*, Banff, Canada, 5-8 October, 2017.

[37] Yeonju Oh, Wei-Liang Kao, and Byung-Cheol Min, **"Indoor Navigation Aid System Using No Positioning Technique for Visually Impaired People"**, *HCI International 2017*, Poster Extended Abstract, Vancouver, Canada, 9-14 July, 2017.

[38] Manoj Penmetcha, Arabinda Samantaray, and Byung-Cheol Min, **"SmartResponse: Emergency and Non-Emergency Response for Smartphone based Indoor Localization applications"**, *HCI International 2017*, Poster Extended Abstract, Vancouver, Canada, 9-14 July, 2017.

[39] Hyun Hwang, Jun Han Bae, and Byung-Cheol Min, **"Design Guidelines for Sensor Locations on 3D Printed Prosthetic Hands"**, *IEEE Robotic Computing (IRC) 2017*, Taichung, Taiwan, April 10-12, 2017.

[40] Sangmi Shin, Byung-Cheol Min, Julia Rayz, and Eric T. Matson, **"Semantic Knowledge-based Language Education Device for Children with Developmental Disabilities"**, *IEEE Robotic Computing (IRC) 2017*, Taichung, Taiwan, April 10-12, 2017.

[41] Huanhuan Wang, Pai-Ying Hsiao, and Byung-Cheol Min, **"Examine the Potential of Robots to Teach Autistic Children Emotional Concepts: A Preliminary Study"**, *The Eight International Conference on Social Robotics (ICSR)*, Kansas City, USA, Nov. 1-3, 2016.

[42] Jun Han Bae, Jeehwan Park, Sangjun Lee, and Byung-Cheol Min, **"Tri-SedimentBot: An Underwater Sediment Sampling Robot"**, *Automation Science and Engineering (CASE), 2016 IEEE International Conference on*, Fort Worth, Texas, USA, Aug. 21-24, 2016.

[43] Kangwei Chen, Victoria Plaza-Leiva, Byung-Cheol Min, Aaron Steinfeld, and M. Bernardine Dias, **"NavCue: Context Immersive Navigation Assistance for Blind Travelers"**, *11th ACM/IEEE International Conference on Human-Robot Interaction (HRI) Videos*, 2016.

[44] Byung-Cheol Min, Suryansh Saxena, Aaron Steinfeld, and M. Bernardine Dias, **"Incorporating Information from Trusted Sources to Enhance Urban Navigation for Blind Travelers"**, *IEEE International Conference on Robotics and Automation (ICRA)*, Seattle, Washington, May 26-30, 2015.

[45] Byung-Cheol Min, Aaron Steinfeld, and M. Bernardine Dias, **"How Would You Describe Assistive Robots to People Who are Blind or Low Vision?"**, *Proceedings of the Tenth Annual ACM/IEEE International Conference on Human-Robot Interaction (HRI) Extended Abstracts*, 2015.

[46] Byung-Cheol Min, Eric T. Matson, Anthony H. Smith, and J. Eric Dietz, **"Using Directional Antennas as Sensors to Assist Fire-fighting Robots in Large Scale Fires"**, *2014 IEEE Sensors Applications Symposium (SAS)*, Queenstown, New Zealand, Feb. 18-20, 2014.

[47] Byung-Cheol Min and Eric T. Matson, **"Robotic Follower System using Bearing-only Tracking with Directional Antennas"**, *in Proc. International Conference on Robot Intelligence Technology and Applications (RiTA)*, pp. 37-58, 2014.

[48] Esther Rolf, Matt Whitlock, Byung-Cheol Min, and Eric T. Matson, **"Enhancing Wi-Fi Signal Strength of a Dynamic Heterogeneous System Using a Mobile Robot Provider"**, *in Proc. International Conference on Robot Intelligence Technology and Applications (RiTA)*, pp. 927-937, 2014.

[49] Jae-Seok Yoon, Byung-Cheol Min, Seong-Og Shin, and Donghan Kim, **"GA-based Optimal Waypoint Design for Improved Path Following of Mobile Robot"**, *in Proc. International Conference on Robot Intelligence Technology and Applications (RiTA)*, pp. 127-136, 2014.

[50] Byung-Cheol Min, Eric T. Matson, and Bakytgul Khaday, **"Design of a Networked Robotic System Capable of Enhancing Wireless Communication Capabilities"**, *11th IEEE International Symposium on Safety, Security, and Rescue Robotics (SSRR)*, Sweden, Oct. 21-26, 2013.

[51] Soo Hyeok Kang, Yong Ho Kim, Byung-Cheol Min, Soon-Geul Lee, Jinung An, Donghan Kim, **"Smart Floor with Learning Capability for Mobile Robot System"**, *Recent Advances in Robotics and Automation (Series: Studies in Computational Intelligence)*, Vol. 480, pp. 205-215, Springer Berlin Heidelberg, 2013.

[52] Sangyup Lee, Byung-Cheol Min, Dong-Hoe Kim, Jae-Seok Yoon, and Donghan Kim, **"Passive RFID Positioning System Using RF Power Control"**, *in Proc. International Conference on Robot Intelligence Technology and Applications (RiTA)*, Gwangju, Korea, Dec. 2012.

[53] Ji Hyeon Hong, Byung-Cheol Min, Julia M. Taylor, Victor Raskin, and Eric T. Matson, **"NL-Based Communication with Firefighting Robots"**, *2012 IEEE International Conference on Systems, Man, and Cybernetics (SMC)*, pp. 1461-1466, Seoul, Korea, Oct. 14-17, 2012.

[54] Soo Hyeok Kang, Byung-Cheol Min, Ji Hyeon Hong, Eric T. Matson, Soon-Geul Lee, and Donghan Kim, **"Novel Positioning System for Mobile Robot Using RFID Power Control"**, *Joint Proceedings of the 13th Annual TAROS Conference and the 15th Annual FIRA RoboWorld Congress*, Bristol, UK, August 20-23, 2012.

[55] Daniel K. Schrader, Byung-Cheol Min, Eric T. Matson, and J. Eric Dietz, **"Combining Multiple, Inexpensive Receivers to Improve Accuracy and Reliability"**, *2012 IEEE Sensors Applications Symposium (SAS)*, University of Brescia, Italy, Feb. 7-9, 2012.

[56] Byung-Cheol Min, John Lewis, Daniel K. Schrader, Eric T. Matson, and Anthony H. Smith, **"Self-orientation of Antennas, Assisted by Mobile Robots, for Receiving the Best Wireless Signal"**, *2012 IEEE Sensors Applications Symposium (SAS)*, University of Brescia, Italy, Feb. 7-9, 2012.

[57] Eric T. Matson, Julia M. Taylor, Victor Raskin, Byung-Cheol Min, and E. Cho Wilson, **"A Natural Language Exchange Model for Enabling Human, Agent, Robot and Machine Interaction"**, *5th International Conference on Automation, Robotics and Applications (ICARA)*, Wellington, New Zealand, Dec. 6-8, 2011.

[58] Soo Hyeok Kang, Yong Ho Kim, Eun Jin Lee, Soon-Geul Lee, Byung-Cheol Min, Jinung An, and Donghan Kim, **"Implementation of Smart Floor for Multi-Robot System"**, *5th International Conference on Automation, Robotics and Applications (ICARA)*, Wellington, New Zealand, Dec. 6-8, 2011.

[59] Byung-Cheol Min, Ji Hyeon Hong, and Eric T. Matson, **"Adaptive Robust Control (ARC) for an Altitude Control of a Quadrotor Type UAV Carrying an Unknown Payloads"**, *2011 11th International Conference on Control, Automation and Systems (ICCAS)*, KINTEX, Gyeonggi-do, Korea, Oct. 26-29, 2011.

[60] Eric T. Matson and Byung-Cheol Min, **"M2M infrastructure to integrate humans, agents and robots into collectives"**, *Instrumentation and Measurement Technology Conference (I2MTC)*, 2011 IEEE, Hangzhou, China, May 10-12, 2011.

[61] Byung-Cheol Min, Hina Chaudhry, Eric T. Matson, Anthony H. Smith, and J. Eric Dietz, **"Rural Energy Security using Autonomous Micro-turbine Smart Grids"**, *2011 IEEE Rural Power Conference (IEEE REPC)*, Chattanooga, Tennessee, USA, April 10-13, 2011.

[62] Jeong Wan Kim, Yong Ho Kim, Byung-Cheol Min, and Donghan Kim, **"Tacit Navigation Method for Multi-Agent System"**, *in Proc. FIRA Robot World Congress*, Bangalore, India, Sep. 15-17, 2010.

[63] Byung-Cheol Min, Hee Yeul Kwon, and Donghan Kim, **"Path Planning Algorithm for VTOL Type UAVs Based on the Methods of Ray Tracing and Limit Cycle"**, *IEEE International Symposium on Computational Intelligence in Robotics and Automation (CIRA)*, Dajeon, Korea, Dec. 2009.

[64] Byung-Cheol Min, Chan Ho Cho, Kyung Min Choi, and Donghan Kim, **"Development of a Micro Quad-Rotor UAV for Monitoring an Indoor Environment"**, *in Proc. FIRA Robot World Congress*, Incheon, Korea, Aug. 16-20, 2009.

[65] Chan Ho Cho, Byung-Cheol Min, and Donghan Kim, **"A Gait Generation for an Unlocked Joint Failure of the Quadruped Robot with Balance Weight"**, *in Proc. FIRA Robot World Congress*, Incheon, Korea, Aug. 16-20, 2009.

[66] Byung-Cheol Min, Eun Jin Lee, Soo Hyeok Kang, and Donghan Kim, **"Limit-cycle Navigation Method for a Quad-rotor Type UAV"**, *Industrial Electronics, 2009. ISIE 2009, IEEE International Symposium on*, pp. 1352-1357, Seoul, Korea, July 2009.

Workshop Papers, Reports, Extended Abstracts, & Demonstrations

[1] Wonse Jo, Robert Wilson, Jaeeun Kim, Steve McGuire, and Byung-Cheol Min, **"Toward a Wearable Biosensor Ecosystem on ROS 2 for Real-time Human-Robot Interaction Systems"**, *2021 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), Workshop on HMRS 2021: Cognitive and Social Aspects of Human Multi-Robot Interaction*, Prague, Czech Republic, Sep 27 – Oct 1, 2021. **[Excellent Paper Award]**

[2] Su Sun and Byung-Cheol Min, **"Active Tapping via Gaussian Process for Efficient Unknown Object Surface Reconstruction"**, *2021 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), Workshop on RoboTac 2021: New Advances in Tactile Sensation, Interactive Perception, Control, and Learning. A Soft Robotic Perspective on Grasp, Manipulation, & HRI*, Prague, Czech Republic, Sep 27 – Oct 1, 2021.

[3] Wonse Jo, Jaeeun Kim, and Byung-Cheol Min, **"ROS2 Open-Source Swarm Robot Platform: SMARTmBot"**, *021 International Conference on Robotics and Automation (ICRA), Workshop on Robot Swarms in the Real World: From Design to Deployment - Live Demonstration*, Xi'an, China, May 30 - June 5, 2021.

[4] Ramviyas Parasuraman, Sergio Caccamo, Luigi Freda, Petter Ögren, and Byung-Cheol Min, **"An Approach to Retrieve from Communication Loss in Field Robots"**, *Robotics: Science and Systems (RSS) 2017, Workshop on Robot Communication in the Wild: Meeting the Challenges of Real-World Systems*, MIT, Massachusetts, USA, July 12-16, 2017.

[5] Danilo Tardioli, Ramviyas Parasuraman, Petter Ögren, and Byung-Cheol Min, **"Pound: A ROS Node to Improve Communication Latency Performance in Multi-Robot Systems"**, *Robotics: Science and Systems (RSS) 2017, Workshop on Robot Communication in the Wild: Meeting the Challenges of Real-World Systems*, MIT, Massachusetts, USA, July 12-16, 2017.

[6] M. Bernardine Dias, Ermine Teves, Eric Hochendoner, Praneetha Sistla, Byung-Cheol Min, and Aaron Steinfeld, **"Enhancing the Safety of Visually Impaired Travellers in and around Transit Stations"**, *The U.S. Department of Transportation, University Transportation Centers Program*, 2016.

[7] Jun Han Bae, Dong Hun Lee, and Byung-Cheol Min, **"Design and Concept of the Sediment Sampling Robot and Dynamic Buoy"**, *IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS 2016)*, Late-Breaking Reports, Daejeon, Korea, Oct. 9-14, 2016.

[8] Jun Han Bae, Eric T. Matson, and Byung-Cheol Min, **"Towards an Autonomous Water Monitoring System with an Unmanned Aerial and Surface Vehicle Team"**, *2015 IEEE International Symposium on Safety, Security, and Rescue Robotics (SSRR)*, West Lafayette, IN, USA, Oct. 18-20, 2015.

[9] Byung-Cheol Min, Aaron Steinfeld, and M. Bernardine Dias, **"Towards Effective Human-Robot Interaction for Visually Imparied Adults"**, *ICRA 2015*, Late-Breaking Reports, Seattle, May 26-30, 2015.

[10] Alekhya Jonnalagedda, Lucy Pei, Suryansh Saxena, Ming Wu, Byung-Cheol Min, Ermine A. Teves, Aaron Steinfeld, and M. Bernardine Dias, **"Enhancing the Safety of Visually Impaired Travelers in and around Transit Stations"**, tech. report CMU-RI-TR-14-28, Robotics Institute, Carnegie Mellon University, December, 2014.

Preprints

[1] Gyeongmin Kim, Taehyeon Kim, Shyam Sundar Kannan, L.N Vishnunandan Venkatesh, Donghan Kim, and Byung-Cheol Min, **"DynaCon: Dynamic Robot Planner with Contextual Awareness via LLMs"**, *arXiv preprint*, arXiv:2309.16031, 2023.

[2] Ike Obi, Ruiqi Wang, Prakash Shukla, and Byung-Cheol Min, **"Robot Patrol: Using Crowdsourcing and Robotic Systems to Provide Indoor Navigation Guidance to The Visually Impaired"**, *arXiv preprint*, arXiv:2306.02843, 2023.

[3] Wonse Jo, Jaeeun Kim, Ruiqi Wang, Jeremy Pan, Revanth Krishna Senthilkumaran, and Byung-Cheol Min, **"SMARTmBOT: A ROS2-based Low-cost and Open-Source Mobile Robot Platform"**, *arXiv preprint*, arXiv:2203.08903, 2022.

[4] Sangjun Lee and Byung-Cheol Min, **"Distributed Control of Multi-Robot Systems in the Presence of Deception and Denial of Service Attacks"**, *arXiv preprint*, arXiv:2102.00098, 2021.

[5] Wonse Jo, Shyam Sundar Kannan, Go-Eum Cha, Ahreum Lee, and Byung-Cheol Min, **"A ROS-based Framework for Monitoring Human and Robot Conditions in a Human-Multi-robot Team"**, *arXiv preprint*, arXiv:2006.03784, 2020.

[6] Arabinda Samantaray, Baijian Yang, J Eric Dietz, and Byung-Cheol Min, **"Algae Detection using Computer Vision and Deep Learning"**, *arXiv preprint*, arXiv:1811.10847, 2018.

Manuscript under Review

[1] L. N. Vishnunandan Venkatesh and Byung-Cheol Min, **"Learning from Demonstration Framework for Multi-Robot Systems Using Interaction Keypoints and Soft Actor-Critic Methods"**, *2024 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*, Abu Dhabi, UAE, October 13-17, 2024. (Under Review)

[2] L. N. Vishnunandan Venkatesh and Byung-Cheol Min, **"ZeroCAP: Zero-Shot Multi-Robot Context Aware Pattern Formation via Large Language Models"**, *2024 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*, Abu Dhabi, UAE, October 13-17, 2024. (Under Review)

[3] Weizheng Wang, Le Mao, Ruiqi Wang, and Byung-Cheol Min, **"SRLM: Human-in-Loop Interactive Social Robot Navigation with Large Language Model and Deep Reinforcement Learning"**, *2024 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*, Abu Dhabi, UAE, October 13-17, 2024. (Under Review)

[4] Shyam Sundar Kannan*, L. N. Vishnunandan Venkatesh*, and Byung-Cheol Min (*equal contribution), **"SMART-LLM: Smart Multi-Agent Robot Task Planning using Large Language Models"**, *2024 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*, Abu Dhabi, UAE, October 13-17, 2024. (Under Review)

[5] Taehyeon Kim and Byung-Cheol Min, **"Semantic Layering in Room Segmentation via LLMs"**, *2024 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*, Abu Dhabi, UAE, October 13-17, 2024. (Under Review)

[6] Shyam Sundar Kannan and Byung-Cheol Min, **"PlaceFormer: Transformer-based Visual Place Recognition using Multi-Scale Patch Selection and Fusion"**, *IEEE Robotics and Automation Letters*. (Under Review)

[7] Weizheng Wang*, Le Mao*, Baijian Yang, Guohua Chen, and Byung-Cheol Min (*equal contribution), **"Hyper-STTN: Social Group-aware Spatial-Temporal Transformer Network for Human Trajectory Prediction with Hypergraph Reasoning"**, *IEEE Robotics and Automation Letters*. (Under Review)

[8] Wonse Jo, Go-Eum Cha, Dan Foti, and Byung-Cheol Min, **"SMART-TeleLoad: A New Graphic User Interface to Generate Affective Loads for Teleoperation"**, *SoftwareX*. (Under Review)

[9] Wonse Jo, Ruiqi Wang, Baijian Yang, Dan Foti, Mo Rastgaar, and Byung-Cheol Min, **"Affective Workload Allocation for Multi-human Multi-robot Teams"**, *IEEE Transactions on Human-Machine Systems*. (Under Review)

[10] Wonse Jo*, Ruiqi Wang*, Su Sun, Revanth Senthilkumaran, Daniel Foti, and Byung-Cheol Min (*equal contribution), **"MOCAS: A Multimodal Dataset for Objective Cognitive Workload Assessment on Simultaneous Tasks"**, *IEEE Transactions on Affective Computing*. (Under Review)

[11] Jun Han Bae, Pou Hei Chan, Yongho Kim, Richard M. Voyles, Sara K. Mcmillan, Bumjoo Lee, Mauricio Postigo-Malaga, Edgard Gonzales Zenteno, Jose Garcia-Bravo, Brittany Newell, J. Eric Dietz, and Byung-Cheol Min, **"Uncrewed Remote Underwater Robotic Sediment Core Sampler"**, *IEEE Journal of Oceanic Engineering*. (Under Review)

[12] Tamzidul Mina, Shyam Sundar Kannan, Wonse Jo, Shaocheng Luo, Galen B. King, and Byung-Cheol Min, **"Distributed Multi-robot Arbitrary Object Transportation with Pushing Surface Identification and Model-based Pushing Effort Regulation"**, *IEEE Transactions on Systems, Man and Cybernetics: Systems*. (Under Review)

Patents

[1] Byung-Cheol Min et al., **"Method for providing guidance information based on user information"**, Patent No. 1011983850000, October 2012. (Korean Patent)

[2] Byung-Cheol Min et al., **"Apparatus for Cleaning Exterior Wall of Building"**, Patent No. 1011815400000, September 2012. (Korean Patent)

[3] Byung-Cheol Min et al., **"Walking guide Robot for blind person"**, Patent No. 1011468550000, May 2012. (Korean Patent)

[4] Byung-Cheol Min et al., **"LED Lighting Apparatus with Air Levitation System"**, Patent No. 1010905640000, November 2011. (Korean Patent)

[5] Byung-Cheol Min et al., **"Embedding Device for RFID Tag"**, Patent No. 101056 8640000, August 2011. (Korean Patent)

GRANTS

External Research Grants

Awarded

- FW-HTF-P: Interactive Multi-Human Multi-Remote-Robot Operations for Future Construction Field, Role: Co-PI (PI: Jin Wei-Kocsis), Sponsor: National Science Foundation, Amount: **$150,000** (10/01/2022 – 05/31/2024).
- CAREER: Adaptive Human Multi-robot Systems, Role: PI, Sponsor: National Science Foundation, Amount: **$500,000** (02/15/2019 – 01/31/2025).
- PFI-RP: Partnerships for Innovation in Interoperable Building Information Modeling Technology for Applications in Automated Building Code Compliance Checking and Modular Construction Automation, Role: Co-PI (PI: Jiansong Zhang), Sponsor: National Science Foundation, Amount: **$1,108,003** (09/15/2018 – 08/31/2024).
- CPS: Medium: Collaborative Research: Closed Loop Sustainable Precision Animal Agriculture, Role: Co-PI (PI: Richard Voyles), Sponsor: National Institute of Food and Agriculture, Amount: **$541,448** (09/01/2018 – 08/31/2023).
- I/UCRC Phase I: Robots and Sensors for the Human Well-being, Role: Senior Personnel (PI: Richard Voyles), Sponsor: National Science Foundation, Amount: **$637,202** (09/15/2014 – 08/31/2022).
- UNSA NEXUS: Robotic Water Quality Monitoring and Distribution Systems: A Pilot Study, Role: PI, Sponsor: Universidad Nacional de San Agustin, Amount: **$365,439** (01/01/2018 – 02/15/2022).
- Cybersecurity and Safety Challenges in Autonomous Vehicles: Threats Identification and Countermeasures Development, Role: PI, Sponsor: National Institute of Justice, Amount: **$147,131** (08/01/2017 – 5/31/2021).
- Workshop to Explore US/Korean Collaboration in Human-Friendly Co-Robotic Technologies, Role: Co-PI (PI: Richard Voyles), Sponsor: National Science Foundation, Amount: **$14,980** (09/01/2017 – 03/31/2020).
- Sejong-Purdue Program 2016, Role: Co-PI (PI: Eric T. Matson), Sponsor: Sejong University, Korea, Amount: **$89,998** (05/01/2016 – 12/31/2016).
- KyungPook National-IITP-Purdue Summer Software Program, Role: Co-PI (PI: Eric T. Matson), Sponsor: Kyungpook National University, Korea, Amount: **$45,426** (05/01/2016 – 12/31/2016).

Pending

- IRES: Hands-on Research Experiences in South Korea on AI and Robotics for Smart Construction, Role: PI, Sponsor: National Science Foundation, Amount: **$450,000** (10/01/2024 – 09/30/2027).
- Collaborative Research: EAGER: TaskDCL: Towards Adaptive Human-Reconfigurable Supernumerary Robotic Limbs Interaction, Role: PI, Sponsor: National Science Foundation, Amount: **$150,000** (07/01/2024 – 06/30/2026).

- Enabling Next-Generation HyFlex Field Laboratories through an Innovative Leaner-In-The-Loop Multi-Robot System, Role: Co-PI (PI: Jin Wei-Kocsis), Sponsor: National Science Foundation, Amount: **$900,000** (08/01/2024 – 07/31/2027).
- Human Modelling and Task Allocation for Multi-human Multi-robot Teams, Role: PI, Sponsor: U.S. Army Research Lab, Amount: **$550,000** (06/01/2024 – 05/31/2026).
- LCMM: Enable Transformative Field Laboratory Hub for Engineering and Technology Education Through a Learner-Centered Multi-Remote-Learner Multi-Robot System, Role: Co-PI (PI: Jin Wei-Kocsis), Sponsor: Institute of Education Sciences, Amount: **$2,000,000** (07/01/2024 – 06/30/2028).

Internal Research Grants

Awarded

- Detecting Humans' Adaptive Behavior Using Deep Learning Application to Provide Active Thermal Comfort Controls in Occupancy Spaces, Role:Co-PI (PI: Kyubyung Kang), Sponsor: Purdue Polytechnic Institute, Amount: **$8,000** (11/04/2021 – 06/30/2022).
- 2021-22 COVID-19 Research Disruption Fund, Role: PI, Sponsor: Purdue University, Amount: **$25,000** (10/05/2021 – 04/30/2022).
- FY20-21 PRF Research Grants: Human-Delivery Robot Social Interaction for Last-mile Delivery, Role: PI, Sponsor: Purdue University, Amount: **$31,119** (08/17/2020 – 08/16/2021).
- Reconfigurable Cyber-Physical Simulators for Multi-Robot Systems, Role: PI, Sponsor: Purdue Polytechnic Institute, Amount: **$8,000** (08/01/2020 – 06/30/2021).
- Wheeled Mobile Parallel Robots with Hybrid Moving and Manipulation Functions, Role:Co-PI (PI: Dongming Gan), Sponsor: Purdue Polytechnic Institute, Amount: **$8,000** (08/01/2020 – 06/30/2021).
- Polytechnic Post-Doc Support Competition Award, Role: Co-PI (PI: Sunghwan Lee), Sponsor: Purdue University, Amount: **$50,000** (7/01/2020 – 08/31/2021)
- 18-19 Laboratory & University Core Facility Research Equipment Program: Acquisition of a Modular Robotic Walkway for Development and Testing of Soft Assistive Exoskeletons, Role: Co-PI (PI: Richard Voyles), Sponsor: Purdue University, Amount: **$169,845** (01/01/2019 – 12/31/2019).
- Distributed Multi-robot Systems for Autonomous Construction, Role: PI, Sponsor: Purdue Polytechnic Institute, Amount: **$8,000** (11/01/2018 – 06/30/2019).
- Developing Crancobots to Support Automated Construction of Buildings, Role:Co-PI (PI: Jiansong Zhang), Sponsor: Purdue Polytechnic Institute, Amount: **$8,000** (11/01/2018 – 06/30/2019).
- Purdue Research Foundation (PRF) International Travel Grant, Role: PI, Sponsor: Purdue University, Amount: **$2,000** (07/01/2018 - 06/30/2019).
- Mobile Crowd Sensing for Sustainability Challenges: A Behavioral Approach to Inducing User Participation, Role: Co-PI (PI: David J. Yu), Sponsor: Purdue Center for the Environment, Amount: **$15,000** (06/01/2018 – 05/31/2019).
- FY18-19 PRF Research Grants: Towards Autonomous Robotic Systems for Control of Harmful Algae Blooms, Role: PI, Sponsor: Purdue University, Amount: **$30,144** (05/10/2018 – 09/14/2019).
- Drone-based Visual Inspection for Airplane, Role: PI, Sponsor: Purdue Polytechnic Institute, Amount: **$8,000** (04/01/2018 – 06/30/2018).
- Collaborative Interdisciplinary Machine Learning Research Infrastructure, Role: Co-PI (PI: Vetria Byrd) , Sponsor: Purdue Polytechnic Institute, Amount: **$8,000** (04/01/2018 – 06/30/2018).
- 17-18 Laboratory & University Core Facility Research Equipment Program: Acquisition of Multiple Mobile Robot Platforms, Role: PI, Sponsor: Purdue University, Amount: **$83,500** (01/01/2018 – 12/31/2018).
- The Realizing the Digital Enterprise (RDE) Research Area Travel Grant, Role: PI, Sponsor: Purdue Polytechnic Institute, Amount: **$3,000** (03/12/2018 – 06/30/2018).
- Purdue Research Foundation (PRF) Summer Faculty Research Grant, Role: PI, Sponsor: Purdue University, Amount: **$8,000** (06/01/2017 – 07/31/2017).

- Provost Major Equipment Grant: Bi-Manual Dexterous Manipulation for Intuitive Autonomy, Role: Co-PI (PI: Richard Voyles), Sponsor: Purdue University, Amount: **$144,732** (07/01/2016 – 06/31/2017).
- Polytechnic Post-Doc Support Competition Award, Role: PI, Sponsor: Purdue University, Amount: **$100,000** (10/01/2016 – 09/31/2018)

SEMINARS, INVITED TALKS & PRESENTATIONS

[1] **"Towards Incorporating Elderly Preferences and Demonstrations into Robot Learning"** December, 2023
Kyung Hee University, Yongin, Korea

[2] **"Integrating Human Intelligence into Robot Learning"** September, 2023
Sheffield Hallam University, Sheffield, UK

[3] **"Integrating Human Intelligence into Robot Learning"** June, 2023
Sungkyunkwan University, Seoul, Korea

[4] **"Purdue SMART Lab: HRI-oriented Research"** July, 2022
GIST, Gwangju, Korea

[5] **"Purdue SMART Lab Research"** July, 2022
Kyung Hee University, Yongin, Korea

[6] **"Environmental Sampling Robots for Sediments and Samples of Rivers & Lakes"** January, 2022
Underwater Robots - Trends & Challenges, Joint Webinar by Saab, Nanyang Technological University, and Purdue University, Virtual

[7] **"Robotic Sediment Sampling System for Surface Water Sediment Collection"** November, 2021
Fall Nexus Webinars Series, Arequipa Nexus Institute, Purdue University/Universidad Nacional de San Agustín (UNSA), Virtual

[8] **"Robot Design, Planning, and Control for Environmental Applications"** August, 2021
Invited talk at the 2021 2nd International Conference of the Brain Korea21 FOUR Interdisciplinary Program in IT-Bio Convergence System, Virtual

[9] **"Robotics as an Example of Sociotechnical/Interdisciplinary Research"** January, 2021
Purdue Polytechnic Research Mentoring Lunch, Purdue University, West Lafayette, IN USA

[10] **"Towards Adaptive Human Multi-Robot Systems"** November, 2020
Colloquium on Multimedia Computing Systems 2020, Sungkyunkwan University, Seoul, Korea

[11] **"Multi-Robot Systems and Their Applications"** June, 2019
Chungbuk National University, Cheongju, Korea

[12] **"Multi-Robot Control Using Wireless Network"** June, 2018
Korea Internet & Security Agency (KISA), Naju, Korea

[13] **"Multi-Robot Systems and Their Applications"** June, 2018
Korea Research Institute of Ships & Ocean Engineering (KRISO), Daejeon, Korea

[14] **"Field Robotics and Its Applications"** May, 2018
Hyundai KEFICO, Gunpo, Korea

[15] **"Assistive Technology and Robotics for People with Disability"** June 2016
Keynote speech at the 2016 International Workshop on ICT in Medicine and Health Care (ICTMHC 2016), Yeongnam Univ., Korea

[16] **"Assistive Technology and Robotics for People with Disability"** June, 2016
DGIST, Daegu, Korea

[17] **"Assistive Technology and Robotics for People with Disability"** June, 2016
Chungnam National University (CNU), Daejeon, Korea

[18] **"Assistive Technology and Robotics for People with Disability"** May, 2016
Dongguk University, Seoul, Korea

[19] **"Assistive Technology and Robotics for People with Disability"** May, 2016
Kyung Hee University, Yongin, Korea

[20] **"Assistive Robotics for Search-and-Rescue Operations and People who are Blind"** January, 2016
Indiana University-Purdue University Indianapolis (IUPUI), Indianapolis, IN USA

[21] **"Advancing Robotics Technology for Search-and-Rescue Operations and Assistive Robotics for People who are blind"** January, 2016
Purdue University, Robotics Seminar Series, West Lafayette, IN USA

[22] **"Advancing Robotics Technology for Search-and-Rescue Operations and Assistive Robotics for People with Disabilities"** October, 2015
Kyung Hee University, Yongin, Korea

[23] **"Assistive Robots for Blind Travelers"** April, 2015
Gacheon University, Seongnam, Korea

[24] **"Assistive Robots for Blind Travelers"** April, 2015
Dongguk University, Seoul, Korea

[25] **"Advancing Robotics Technology for Search-and-Rescue Operations and Assistive Robotics for People with Disabilities"** April, 2015
Korea Institute of Science and Technology (KIST), Seoul, Korea

[26] **"Assistive Robots for Blind Travelers"** January, 2015
Transportation Research Board 94th Annual Meeting, Washington D.C., USA

COURSES TAUGHT (COURSE EVALUATION, 5.0 MAX)

CNIT 355 – Software Development for Mobile Computers, Purdue University

– Students #: 19	Evaluation on Course: 4.6	Evaluation on Instructor: 4.6	Fall 2023
– Students #: 15	Evaluation on Course: 4.7	Evaluation on Instructor: 4.8	Fall 2022
– Students #: 25	Evaluation on Course: 4.7	Evaluation on Instructor: 4.8	Fall 2021
– Students #: 18	Evaluation on Course: 4.5	Evaluation on Instructor: 4.6	Fall 2020
– Students #: 28	Evaluation on Course: 4.3	Evaluation on Instructor: 4.6	Fall 2019
– Students #: 36	Evaluation on Course: 4.5	Evaluation on Instructor: 4.6	Fall 2018
– Students #: 34	Evaluation on Course: 4.7	Evaluation on Instructor: 4.7	Fall 2017
– Students #: 21	Evaluation on Course: 4.6	Evaluation on Instructor: 4.7	Fall 2016

CNIT 425 – Software Development for Mobile Devices II, Purdue University

– Students #: 8	Evaluation on Course: 4.8	Evaluation on Instructor: 4.7	Spring 2023
– Students #: 14	Evaluation on Course: 4.7	Evaluation on Instructor: 4.8	Spring 2022
– Students #: 8	Evaluation on Course: 4.5	Evaluation on Instructor: 4.5	Spring 2021
– Students #: 10	(*No course evaluation conducted due to COVID-19*)		Spring 2020
– Students #: 7	Evaluation on Course: 4.5	Evaluation on Instructor: 4.5	Spring 2019
– Students #: 16	Evaluation on Course: 4.7	Evaluation on Instructor: 4.8	Spring 2018
– Students #: 11	Evaluation on Course: 4.9	Evaluation on Instructor: 4.9	Spring 2017

CNIT 581-AST – Introduction to Assistive Technology and Robotics, Purdue University

– Students #: 11	Evaluation on Course: 4.8	Evaluation on Instructor: 4.9	Fall 2023
– Students #: 11	Evaluation on Course: 4.7	Evaluation on Instructor: 4.8	Fall 2022
– Students #: 3	Evaluation on Course: 5.0	Evaluation on Instructor: 5.0	Fall 2021
– Students #: 6	Evaluation on Course: 4.5	Evaluation on Instructor: 4.8	Fall 2020
– Students #: 13	Evaluation on Course: 4.9	Evaluation on Instructor: 4.9	Fall 2018
– Students #: 6	Evaluation on Course: 4.3	Evaluation on Instructor: 4.9	Fall 2017
– Students #: 11	Evaluation on Course: 4.7	Evaluation on Instructor: 4.8	Fall 2016
– Students #: 11	Evaluation on Course: 4.7	Evaluation on Instructor: 4.7	Fall 2015

CNIT 581-SDR – Software Design and Development for Robotics, Purdue University

- Students #: 13 Evaluation on Course: 4.8 Evaluation on Instructor: 4.8 Spring 2023
- Students #: 7 Evaluation on Course: 4.8 Evaluation on Instructor: 4.8 Spring 2022
- Students #: 8 Evaluation on Course: 4.8 Evaluation on Instructor: 4.9 Spring 2021
- Students #: 10 (*No course evaluation conducted due to COVID-19*) Spring 2020
- Students #: 15 Evaluation on Course: 4.2 Evaluation on Instructor: 4.8 Spring 2019
- Students #: 12 Evaluation on Course: 4.8 Evaluation on Instructor: 4.8 Spring 2018
- Students #: 8 (*No course evaluation conducted due to low enrollment*) Spring 2017
- Students #: 11 Evaluation on Course: 5.0 Evaluation on Instructor: 4.9 Spring 2016

POSTDOCS & STUDENTS

Advisees

Current Students (7 Ph.D. students; 1 M.S. student; 2 Undergrad students)

Ph.D. Students

- Ikechukwu Obi: Ph.D., Computer and Information Technology (co-advised with Dr. Romila Pradhan) 2024 – Present
- Taehyeon Kim: Ph.D., Computer and Information Technology 2023 – Present
- Weizheng Wang: Ph.D., Technology 2022 – Present
- Ruiqi Wang: Ph.D., Technology 2021 – Present
- Vishnunandan Venkatesh: Ph.D., Technology 2021 – Present
- Go-Eum Cha: Ph.D., Technology 2021 – Present
- Shyam Sundar Kannan: Ph.D., Technology 2019 – Present

M.S. Students

- Jeremy Pan: M.S., Computer and Information Technology 2019 – Present

Undergrad Students

- Dayoon Suh: B.S., Computer and Information Technology 2023 – Present
- Arjun Gupte: B.S., Electrical and Computer Engineering 2023 – Present

Alumni (4 Postdocs; 6 Ph.D. students; 5 M.S. students; 12 Undergrad students)

Postdocs

- Dr. Ahreum Lee (co-mentored with Dr. Colin Gray and Dr. Austin Toombs), First Position: University of Eastern Finland as a Postdoc; Current position: Samsung Electronics 2020
- Dr. Yogang Singh (co-mentored with Dr. Jose Garcia and Dr. Brittany Newell), First Position: Katholieke Universiteit (KU) Leuven as a Postdoc; Current position: Sheffield Hallam University as an Assistant Professor 2019
- Dr. Yuting Chen (co-mentored with Dr. Jiansong Zhang), First Position: University of North Carolina at Charlotte as an Assistant Professor 2019
- Dr. Ramviyas Parasuraman, First Position: The University of Georgia as Assistant Professor 2018

Ph.D. Students

- Wonse Jo: Ph.D., Technology, First Position: University of Michigan as a Postdoc 2022
- Jun Han Bae: Ph.D., Technology (co-advised with Dr. Richard Voyles), First Position: UIUC as a Postdoc; Current position: RIT as an Assistant Professor 2021
- Sangjun Lee: Ph.D., Technology 2021
- Manoj Penmetcha: Ph.D., Technology, First position: NCC and Multiscale Technologies as a Director 2021
- Tamzidul Mina: Ph.D., Mechanical Engineering (co-advised with Dr. Galen King), First Position: Sandia National Lab as a Postdoc; Current position: Sandia national Lab as Senior Member of R&D Technical Staff 2020
- Shaocheng Luo: Ph.D., Technology, First Position: University of Alberta as a Postdoc; Current position: Duke University as a Postdoc 2020

M.S. Students

- Go-Eum Cha: M.S., Computer and Information Technology, First Position: Purdue for her Ph.D. 2020
- Jee Hwan Park: M.S., Mechanical Engineering (co-advised with Dr. Galen King), First Position: LG Innotek; Current position: Hyundai Motors 2020
- Shyam Sundar Kannan: M.S., Computer and Information Technology, First Position: Purdue for his Ph.D. 2019
- Arabinda Samantaray: M.S., Computer and Information Technology, First Position: Cisco 2018

- Yeonju Oh: M.S., Computer and Information Technology, First Position: LG Electronics 2018

Undergrad Students

- Revanth Krishna Senthilkumaran: B.S., Electrical and Computer Engineering 2023
- Pou Hei Chan: B.S., Aeronautical and Astronautical Engineering, First Position: Texas A&M University for his Ph.D. 2023
- Soomin Kim: B.S., Computer and Information Technology, First Position: Samsung Electronics 2023
- Jaeeun Kim: B.S., Robotics Engineering Technology, First Position: Purdue University for her Ph.D. 2022
- Yuta Hoashi: B.S., Mechanical Engineering, First Position: Carnegie Mellon University for his M.S. 2020
- Walter Kruger: B.S., Mechatronics & Robotics Engineering Technology, First Position: GE and University of Michigan for his M.S. 2020
- Andrew Sakai: B.S., Mechanical Engineering Technology 2020
- Yu-Hsi (UC) Wang: B.S., Mechanical Engineering, First Position: UC Berkeley for his M.S. 2019
- Robert Osborne: B.S., Computer and Information Technology, First Position: USAA 2018
- Jee Hwan Park: B.S., Mechanical Engineering, First Position: Purdue for his M.S. 2018
- Yongbum Cho: B.S., Mechanical Engineering, First Position: Samsung Electronics 2017
- Dong Hun Lee: B.S., Mechanical Engineering Technology 2017

Committee Member

Current Students (5 Ph.D. students; 3 M.S. students)

Ph.D. Students

- Nadine Amin: Ph.D., Computer and Information Technology, Committee Chair: Dr. Julia Rayz 2023 – Present
- Yifu Wu: Ph.D., Technology, Committee Chair: Dr. Jin Kocsis 2023 – Present
- Yonggab Kim: Ph.D., Industrial Engineering, Committee Chair: Dr. Seokcheon Lee 2023 – Present
- Carly Mendenhall: Ph.D., Mechanical Engineering, Committee Chair: Dr. Adrian Buganza Tepole and Dr. Laura Blumenschein 2022 – Present
- Zelei Cheng: Ph.D., Technology, Committee Chair: Dr. Wenhai Sun 2021 – Present

M.S. Students

- Hakyun Ju: M.S., Construction Management Technology, Committee Chair: Dr. Kyubyung Kang 2023 – Present
- Diana Alejandra Narvaez: M.S., Engineering Technology, Committee Chair: Dr. Walter Leon-Salas 2023 – Present
- Kexin Meng: M.S., Computer and Information Technology, Committee Chair: Dr. Baijian Yang & Dr. Gang Shao 2023 – Present

Former Students (9 Ph.D. students; 18 M.S. students)

Ph.D. Students

- Upinder Kaur: Ph.D., Technology, Committee Chair: Dr. Richard Voyles 2023
- Oscar Wong Chong: Ph.D., Technology, Committee Chair: Dr. Jiansong Zhang 2022
- Cansu Agrali: Ph.D., Industrial Engineering, Committee Chair: Dr. Seokcheon Lee 2022
- Ho-Young Jeong: Ph.D., Industrial Engineering, Committee Chair: Dr. Seokcheon Lee 2022
- Patchara Kitjacharoenchai: Ph.D., Industrial Engineering, Committee Chair: Dr. Seokcheon Lee 2020
- Daniel Schrader: Ph.D., Technology, Committee Chair: Dr. Eric Matson 2018
- Mauricio Gomez: Ph.D., Technology, Committee Chair: Dr. Eric Matson 2018
- Yazeed Mohammad Al Babtain: Ph.D., Technology, Committee Chair: Dr. Justin Yang 2018
- Amy Wagoner: Ph.D., Technology, Committee Chair: Dr. Eric Matson 2017

M.S. Students

- Hyemin Kim: M.S, Computer and Information Technology, Committee Chair: Dr. Eric Matson 2021
- Hyewon Jeon: M.S, Computer and Information Technology, Committee Chair: Dr. John Springer 2020
- Nanxin Jin: M.S, Computer and Information Technology, Committee Chair: Dr. Baijian Yang 2020
- Li Shen: M.S, Computer and Information Technology, Committee Chair: Dr. Baijian Yang 2020
- Huyunting Huang: M.S, Computer and Information Technology, Committee Chair: Dr. Baijian Yang 2019
- Justin Montgomery: M.S., Engineering Technology, Committee Chair: Dr. Richard Voyles 2019
- Ziyang Tang, M.S, Computer and Information Technology, Committee Chair: Dr. Baijian Yang 2019
- Gagandeep Singh Khanuja, M.S, Computer and Information Technology, Committee Chair: Dr. Baijian Yang 2019
- Hyun Hwang: M.S, Computer and Information Technology, Committee Chair: Dr. Eric Matson 2018
- Ho-Young Jeong: M.S., Industrial Engineering, Committee Chair: Dr. Seokcheon Lee 2018
- Zhenzhi Xu: M.S., Computer and Information Technology, Committee Chair: Dr. Justin Yang 2018

- Jin Hu: M.S., Mechanical Engineering Technology, Committee Chair: Dr. Xiumin Diao 2018
- Austin Riegsecker: M.S., Computer and Information Technology, Committee Chair: Dr. Eric Matson and Prof. Tony Smith 2017
- Sheifali Khare: M.S., Computer and Information Technology, Committee Chair: Prof. Alka Harriger 2017
- Wang Tian: M.S., Computer and Information Technology, Committee Chair: Dr. Justin Yang 2017
- Miae Kim: M.S., Computer and Information Technology, Committee Chair: Dr. Eric Matson 2017
- Ji Yoon Lee: M.S., Computer and Information Technology, Committee Chair: Dr. Eric Matson 2017
- Sang Mi Shin: M.S., Computer and Information Technology, Committee Chair: Dr. Eric Matson 2016

PROFESSIONAL ACTIVITIES

Leadership Roles

- Co-chair: The IROS 2023 session "Aerial Systems – Applications I" 2023
- Co-chair: Workshop & Tutorial of the 18th International Conference on Intelligent Autonomous System (IAS18 - 2023) 2022 – Present
- Co-chair: Workshop/Tutorial of International Conference on Ubiquitous Robots (UR 2022) 2021 – 2022
- Co-chair: The IROS 2020 session "Sensor Fusion for Localization and Mapping" 2020
- Co-organizer: The 1st U.S.-Korea PI Meeting to Explore US/Korea Joint Collaboration in Robotics and Related Areas (NSF workshop to Explore US/Korean Collaboration in Human-Friendly Co-Robotic Technologies) 2017
- Co-organizer: 2015 International Workshop on Communication for Humans, Agents, Robots, Machines and Sensors (CHARMS 2015) 2015
- Associate Technical Program Chair: the 6th International Conference on Automation, Robotics, and Applications (ICARA 2015) 2015

Editorial Boards

- Associate Editor: IEEE RAS/EMBS International Conference for Biomedical Robotics and Biomechatronics (BioRob) 2024 – Present
- Review Editor: Frontiers in Robotics and AI, Section "Field Robotics" 2022 – Present
- Guest Associate Editor: Frontiers in Robotics and AI, Research Topic on "Unknown Environment Exploration by Networked Robots" 2022 – Present
- Guest Associate Editor: Frontiers in Control Engineering, Research Topic on "Coverage Control of Networked Robots" 2021 – Present
- Associate Editor: International Journal of Fuzzy Logic and Intelligent Systems 2020 – Present
- Guest Editor: Applied Sciences (MDPI), Special Issue on "Advances in Robot Path Planning" 2020 – Present
- Associate Editor: IEEE International Conference on Robotics and Automation (ICRA) 2019 – 2021
- Guest Editor: International Journal of Advanced Robotic Systems, Special Issue on "Special Collection on Multi-robot System Assisted by Information Networks" 2018
- Guest Editor: Technologies (MDPI) Special Issue on "Assistive Robotics" 2017 – 2018
- Guest Editor: Sensors (MDPI) Special Issue on "Integration of Sensors in Complex, Intelligent Systems" 2015 – 2016

Program Committee

- Program Committee: 2021 North American Fuzzy Information Processing Society Annual Conference (NAFIPS 2021) 2020
- Program Committee: 18th International Conference on Practical Applications of Agents and Multi-Agent Systems (PAAMS 2020) 2020
- Program Committee: IEEE International Conference on Robotic Computing (IEEE IRC 2020) 2020
- Program Committee: IEEE International Conference on Robotic Computing (IEEE IRC 2019) 2019
- Program Committee: The 1st International Workshop on Virtual, Augmented and Mixed Reality for Human-Robot Interaction (VAM-HRI) 2018
- Program Committee: The 18th IEEE International Conference on Bioinformatics and Bioengineering (IEEE BIBE 2018) 2018
- Program Committee: IEEE International Conference on Robotic Computing (IEEE IRC 2018) 2018
- Program Committee: 2018 International Workshop on Communication for Humans, Agents, Robots, Machines and Sensors (CHARMS 2018) 2018
- Program Committee: 2017 International Workshop on Communication for Humans, Agents, Robots, Machines and Sensors (CHARMS 2017) 2017

- International Program Committee: 14th International Conference on Ubiquitous Robots and Ambient Intelligence (URAI 2017) 2017
- International Program Committee: 8th International Conference on Social Robotics (ICSR) 2016
- International Program Committee: 13th International Conference on Ubiquitous Robots and Ambient Intelligence (URAI 2016) 2016
- Technical Program Committee: 2015 IEEE Sensors Applications Symposium (SAS 2015) 2015
- Technical Program Committee: International Workshop on Security and Privacy in Machine-to-Machine Communications (M2MSec'14) 2014
- Technical Program Committee: 2014 IEEE Sensors Applications Symposium (SAS 2014) 2014
- Program Committee: the 4th International Conference on Emerging Ubiquitous Systems and Pervasive Networks (EUSPN 2013) 2013

Grant Reviewer

- Research Grants Council (RGC) of Hong Kong 2021, 2023
- NSF Review Panel 2017, 2019

Journal Reviewer

- IEEE Transactions on Cybernetics 2018 – Present
- IEEE Transactions on Human-Machine Systems 2021 – Present
- IEEE Robotics and Automation Letters 2018, 2021
- IEEE Transactions on Systems, Man and Cybernetics: Systems 2020
- IEEE Transactions on Industrial Informatics 2018
- Autonomous Robots 2015, 2018
- Robotics and Autonomous Systems 2018
- International Journal of Control 2018
- ETRI Journal 2016 – 2018
- Multimedia Tools and Applications 2014, 2018
- IEEE Transactions on Mobile Computing 2017
- Journal of Intelligent and Robotic Systems 2012 – 2017
- Frontiers in Human Neuroscience 2016
- Journal of Field Robotics 2014, 2015
- Soft Computing 2014, 2015
- IEEE Transactions on Haptics 2014
- IEEE Journal on Selected Areas in Communications 2014
- IEEE Transactions on Mechatronics 2013
- Journal of Mechanical Engineering Science 2014
- Journal of Electromagnetic Waves and Applications 2013
- The Journal of Korea Information and Communications Society (J-KICS) 2013
- International Journal of Advanced Robotic Systems 2012
- Journal of Institute of Control, Robotics an Systems 2012

Conference Reviewer

- ACM conference on Designing Interactive Systems (DIS) 2019 2019
- IEEE International Conference on Soft Robotics (RoboSoft) 2019
- IEEE International Symposium on Safety, Security and Rescue Robotics (SSRR) 2018
- International Workshop on Virtual, Augmented and Mixed Reality for Human-Robot Interaction (VAM-HRI) 2018
- International Conference on Bioinformatics and Bioengineering (BIBE) 2018
- IEEE International Conference on Robotic Computing (IRC) 2017, 2018
- International Workshop on Communication for Humans, Agents, Robots, Machines and Sensors (CHARMS) 2016, 2017
- IEEE International Conference on Robotics and Automation (ICRA) 2015 – 2017
- International Conference on Social Robotics (ICSR) 2016
- IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS) 2014, 2016
- IEEE International Symposium on Robot and Human Interactive Communication (RO-MAN) 2016
- AAAI Conference on Artificial Intelligence (AAAI) 2015
- IEEE Sensors Applications Symposium (SAS) 2012 – 2015
- International Conference on Robot Intelligence Technology and Applications (RiTA) 2012, 2013
- International Conference on Control, Automation and Systems (ICCAS) 2010

– Chinese Control Conference (CCC) 2009

University Leadership & Committee Roles

– University Senate: Purdue University 2023 – Present
– Member: Institute for Control, Optimization and Networks (ICON), Purdue University 2021 – Present
– Member: Center for the Environment, Purdue University 2018 – Present
– Member: Purdue Robotics Accelerator Committee, Purdue University 2016 – Present

College Leadership & Committee Roles

– Co-lead: "Realizing the Digital Enterprise (RDE)" Polytechnic Research Impact Area, Purdue University 2022 – Present
– Member: Search Committee, Associate Dean for Research, Polytechnic Institute, Purdue University 2023
– Co-organizer: Purdue Polytechnic Postdoctoral Seminar Series, Purdue University 2017, 2018

Department Leadership & Committee Roles

– Co-chair: Faculty Search Committee, Computer and Information Technology, Purdue University 2023 – Present
– Chair: Sub Curriculum Committee, Computer and Information Technology, Purdue University 2022 – Present
– Chair: Faculty Search Committee, Computer and Information Technology, Purdue University 2022 – 2023
– Co-chair: Sub Curriculum Committee, Computer and Information Technology, Purdue University 2021 – 2022
– Chair: Faculty Search Committee, Computer and Information Technology, Purdue University 2020 – 2021
– Member: Faculty Search Committee, Computer and Information Technology, Purdue University 2017 – 2020
– Chair: Election Committee, Computer and Information Technology, Purdue University 2018 – 2022
– Co-chair: Election Committee, Computer and Information Technology, Purdue University 2017 – 2018
– Member: Curriculum Committee, Computer and Information Technology, Purdue University 2016 – 2018, 2021 – Present
– Member: Grad Education Committee, Computer and Information Technology, Purdue University 2016 – 2022

External Examination

– Ravi Suppiah: Ph.D., Thesis title "Advancing Rehabilitative Robotics through Signal Processing and Machine Learning Algorithms", Newcastle University, UK 2023
– Lan Anh Trinh Thi: Ph.D., Thesis title "Toward Dependable Multiple Path Planning for Autonomous Robots with Obstacle Avoidance and Congestion Control", School of Innovation, Design and Engineering, Mälardalens University, Västerås, Sweden 2022

PROFESSIONAL MEMBERSHIPS

Institute for Electrical and Electronics Engineers (IEEE), Student Member (2008 – 2014), Member 2014 – Present
Association for Computing Machinery (ACM), Member 2016 – Present

MORE INFORMATION

More information and auxiliary documents can be found at:
http://web.ics.purdue.edu/~minb/ or
http://www.smart-laboratory.org.