Curriculum Vitae - Ahmed H. Qureshi

CONTACT
INFORMATION

Assistant Professor
Department of Computer Science
Purdue University
West Lafayette, IN 47907, USA

Phone: (765)-496-3071
E-mail: qureshi7@purdue.edu
Webpage: qureshiahmed.github.io
Research Group: corallab.net

RESEARCH
INTERESTS

My team is committed to advancing the field of robot task and motion planning for human assistance through both fundamental and applied research. Our primary goal is to develop robots that can understand the general laws of physics and plan their movements in real time, without relying on expert demonstrations, pre-training in simulators, or trial-and-error interactions with their environment. To achieve this, we address various challenges, such as utilizing Partial Differential Equations (PDEs) to create self-supervised and efficient learning-based motion planning methods. We also tackle integrated task and motion planning (TAMP) challenges by interpreting raw visual observations for everyday tasks, like rearranging unfamiliar objects in cluttered spaces. Ultimately, our objective is to enable effective human-aware task and motion planning for active physical human-robot interaction (pHRI), developing methods that assist people while taking into account their social and biomechanical constraints.

EDUCATION

University of California San Diego, USA   **2017 - 2021**

PhD, Intelligent Systems, Robotics and Control

- Thesis topic: Differentiable Neural Motion Planning under Task Constraints

Osaka University, Japan   **2015 - 2017**

Master of Engineering

- Thesis topic: Deep Reinforcement Learning for Human-Robot Interaction in the Real-World

National University of Sciences and Technology (NUST), Pakistan 2010 - 2014

Bachelor of Electrical Engineering

- Thesis Topic: Enhanced RRT* for Motion Planning in Complex, Cluttered and Time-varying Environments

PROFESSIONAL
EMPLOYMENTS

Purdue University   **2021 - Present**

West Lafayette, IN, USA

- Assistant Professor, Department of Computer Science
- Director, Cognitive Robot Autonomy & Learning (CoRAL) Lab
- Affiliate Faculty, Purdue Center for Innovation in Control, Optimization, & Networks

University of California San Diego   **2017 - 2021**

La Jolla, CA, USA

- Graduate Student Researcher

NVIDIA Corporation   2020 - 2021

Robotics Group, Seattle, USA

- Research Intern

Osaka University   2015

Toyonaka, Japan

- Visiting Researcher

Robotics and Intelligence System Engineering (RISE) Lab   2014- 2015

National University of Science & Technology, Islamabad, Pakistan

- Research Assistant

HONORS AND AWARDS

- Outstanding Associate Editor Award, IEEE/RAS Robotics and Automation Letters (RA-L), 2024.
- Best Paper at ICLR Workshop on Neural Fields across Fields: Methods and Applications of Implicit Neural Representations 2023.
- Two gold medals for outstanding undergraduate research by Pakistan Book of Records, 2019.
- Outstanding Young Researcher by Heidelberg Laureate Forum, 2018.
- Japanese Government MEXT Scholarship, 2015-2017.
- NUST GPA-based scholarship, 2010-2014.

PUBLICATIONS

My undergraduate and graduate students are indicated with superscripts ^{U} and ^{G}, respectively.

Patents

P3. **A.H.Qureshi**, Y.Liu, R.Ni. Systems and Methods for Physics-informed Neural Networks for Robot Mapping, US Provisional App. 63/644,362.

P2. **A.H.Qureshi**, R.Ni. Systems and Methods for Physics-informed Autonomous Robot Motion Planning, US Provisional App. 63/503,442.

P1. M.C.Yip, M.J.Bency, **A.H.Qureshi**. Machine Learning based Fixed-Time Optimal Path Generation, US Patent App. 16/222,706, 2019.

Peer-reviewed Journal

J14. V.Gupta^G, P.Dhir^G, J.Dani^G, and **A.H.Qureshi**. MANER: Multi-Agent Neural Rearrangement Planning of Objects in Cluttered Environments, IEEE/RAS Robotics and Automation Letters (RA-L) 2023. [Presented at ICRA'24]

J13. Z.Wang[G] and **A.H.Qureshi**. DeRi-Bot: Learning to Collaboratively Manipulate Rigid Objects via Deformable Objects, IEEE Robotics and Automation Letters 2023. [Presented at ICRA'24]

J12. H.Ren[G] and **A.H.Qureshi**. Robot Active Neural Sensing and Planning in Unknown Cluttered Environments, IEEE Transactions on Robotics, 2023. [Presented at IROS'23] (IF: 7.8)

J11. J.J.Johnson, **A.H.Qureshi**, and M.C.Yip. Learning Sampling Dictionaries for Efficient and Generalizable Robot Motion Planning with Transformers, IEEE/RAS Robotics and Automation Letters (RA-L) 2023.(IF: 5.2)

J10. **A.H.Qureshi**, J.Dong, A.Baig, and M.C.Yip. Constrained Motion Planning Networks X, IEEE Transactions on Robotics 2021. (IF: 6.123)

J9. L.Li, Y.Miao, **A.H.Qureshi**, and M.C.Yip. MPC-MPNet: Model-Predictive Motion Planning Networks for Fast, Near-Optimal Planning under Kinodynamic Constraints, IEEE Robotics and Automation Letters 2021. (IF: 3.608)

J8. **A.H.Qureshi**, J.Dong, A.Choe, and M.C.Yip. Neural Manipulation Planning on the Constraint Manifolds, IEEE/RAS Robotics and Automation Letters 2020. (IF: 3.608)

J7. **A.H.Qureshi**, Y.Miao, A.Simeonov, and M.C.Yip. Motion Planning Networks: Bridging the Gap Between Learning-based and Classical Motion Planners, IEEE Transactions on Robotics 2020. (IF: 6.123)

J6. **A.H.Qureshi**, Y.Nakamura, Y.Yoshikawa and H.Ishiguro. Intrinsically motivated reinforcement learning for human–robot interaction in the real-world, Neural Networks, Vol 107, pp.23-33, 2018. (IF: 7.197)

J5. Zahid. Tahir, **A.H.Qureshi**, Y.Ayaz and R.Nawaz. Potentially guided bidirectionalized RRT* for fast optimal path planning in cluttered environments, International Journal of Robotics and Autonomous Systems, Elsevier, Vol. 108, pp. 13-27, 2018. (IF: 2.638)

J4. **A.H.Qureshi** and Y.Ayaz. Potential Functions Based Sampling Heuristic for Optimal Motion Planning, Autonomous Robots, DOI 10.1007/s10514-015-9518-0, 2015. (IF: 2.066)

J3. **A.H.Qureshi** and Y.Ayaz. Intelligent Bidirectional Rapidly-Exploring Random Trees for Optimal Motion Planning in Complex Cluttered Environments, International Journal of Robotics and Autonomous Systems, Elsevier, Vol. 68, pp. 1-11, 2015. (IF: 1.256)

J2. **A.H.Qureshi**, S.Mumtaz, Y.Ayaz, O.Hasan, M.S.Muhammad and M.T.Mahmood. Triangular Geometrised Sampling Heuristic For RRT* Motion Planner, International Journal of Advanced Robotic Systems (IJARS), InTech Publishers, 12:10, 2015. (IF: 0.526)

J1. S. A. Khan, Y. Ayaz, M. Jamil, S. O. Gillani, M. Naveed, **A. H. Qureshi** and K. F Iqbal.Collab-orative optimal reciprocal collision avoidance for mobile robots, Journal of Control and Automation, 8(8), 203-212.

Peer-reviewed Conference Proceedings

C30. H.Ren[G] and **A.H.Qureshi**. Multi-Stage Monte Carlo Tree Search for Non-Monotone Object Rearrangement Planning in Narrow Confined Environments, IEEE/ RSJ International Conference on Intelligent Robot and Systems (IROS), 2024.

C29. R.Ni[G] and **A.H.Qureshi**. Physics-informed Neural Motion Planning on Constraint Manifolds, IEEE/RAS International Conference on Robotics and Automation (ICRA), 2024.

C28. D.Lawson[G] and **A.H.Qureshi**. Merging Decision Transformers: Weight Averaging for Forming Multi-Task Policies, IEEE/RAS International Conference on Robotics and Automation (ICRA), 2023.

C27. Z.Xiong[G], J.Eappen[G], D.Lawson[U], **A.H.Qureshi**, and S.Jagannathan. Co-learning Planning and Control Policies Using Differentiable Formal Task Constraints, IEEE/RAS International Conference on Robotics and Automation (ICRA), 2024.

C26. J.J.Johnson, **A.H.Qureshi**, and M.C.Yip. Zero-Shot Constrained Motion Planning Transformers Using Learned Sampling Dictionaries, IEEE/RAS International Conference on Robotics and Automation (ICRA), 2024.

C25. W.Chen[U], H.Ren[G], and **A.H.Qureshi**. Language-guided Active Sensing of Confined, Cluttered Environments via Object Rearrangement Planning, Submitted to the IEEE/RAS International Conference on Robotics and Automation (ICRA), 2024.

C24. V.K.Nivash[G] and **A.H.Qureshi**. SIMMF: Semantics-aware Interactive Multiagent Motion Forecasting for Autonomous Vehicle Driving, IEEE/RAS International Conference on Robotics and Automation (ICRA), 2024.

C23. H.Ren[G] and **A.H.Qureshi**. Neural Rearrangement Planning for Object Retrieval from Confined Spaces Perceivable by Robot's In-hand RGB-D Sensor, IEEE/RAS International Conference on Robotics and Automation (ICRA), 2024.

C22. M. Kulshrestha[G] and **A.H.Qureshi**. Structural Concept Learning via Graph Attention for Multi-Level Rearrangement Planning, International Conference on Robot Learning (CoRL), 2023

C21. X. Chen[U], A. Iyer[U], Z. Wang[G], and **A.H.Qureshi**. Efficient Q-Learning over Visit Frequency Maps for Multi-agent Exploration of Unknown Environments, IEEE/RSJ International Conference on Intelligent Robot and Systems (IROS), 2023

C20. D.Lawson[U] and **A.H.Qureshi**. Control Transformer: Robot Navigation in Unknown Environments through PRM-Guided Return-Conditioned Sequence Modeling, IEEE/RSJ International Conference on Intelligent Robot and Systems (IROS), 2023

C19. R.Ni[G] and **A.H.Qureshi**. Progressive Learning for Physics-informed Neural Motion Planning, Robotics: Science & Systems, 2023

C18. R.Ni^G and **A.H.Qureshi**. NTFields: Neural Time Fields for Physics-Informed Robot Motion Planning, International Conference on Representation Learning (ICLR), 2023 [Spotlight]

C17. A.K.Keshari^G, H.Ren^G, and **A.H.Qureshi**. CoGrasp: 6-DoF Grasp Generation for Human-Robot Collaboration, IEEE/RAS International Conference on Robotics and Automation (ICRA), 2023

C16. Z.Xiong^G, J.Eappen^G, **A.H.Qureshi**, and S.Jagannathan. Model-free Neural Lyapunov Control for Safe Robot Navigation, IEEE/RSJ International Conference on Intelligent Robot and Systems (IROS), 2022.

C15. **A.H.Qureshi**, A.Mousavian, C.Paxton, M.C.Yip, and D.Fox. NeRP: Neural Rearrangement Planning for Unknown Objects, Robotics: Science & Systems, 2021.

C14. J.Johnson, L.Li, F.Liu, **A.H.Qureshi**, and M.C.Yip. Dynamically Constrained Motion Planning Networks for Non-Holonomic Robots, Proceedings of IEEE/RSJ International Conference on Intelligent Robot and Systems (IROS), pp. 6937-6943, Las Vegas, USA (Virtual) 2020.

C13. **A.H.Qureshi**, J. J. Johnson, Y. Qin, T. West, B. Boots, and M.C.Yip. Composing Task-Agnostic Policies via Deep Reinforcement Learning, International Conference on Representation Learning (ICLR), 2020.

C12. **A.H.Qureshi**, B. Boots, and M.C.Yip. Adversarial Imitation Via Variational Inverse Reinforcement Learning, International Conference on Representation Learning (ICLR), 2019.

C11. **A.H.Qureshi**, A.Simeonov, M.J.Bency, M.C.Yip. Motion Planning Networks, IEEE RAS International Conference on Robotics and Automation (ICRA), pp. 2118-2124, Montreal, Canada 2019.

C10. M.J.Bency, **A.H.Qureshi**, M.C.Yip. Neural Path Planning: Fixed Time, Near-Optimal Path Generation via Oracle Imitation, Proceedings of IEEE/RSJ International Conference on Intelligent Robot and Systems (IROS), pp. 3965-3972, Macau 2019.

C9. **A.H.Qureshi** and Michael.C.Yip . Deeply Informed Neural Sampling For Robot Motion Planning, Proceedings of IEEE/RSJ International Conference on Intelligent Robot and Systems (IROS), pp. 6582-6588, Madrid, Spain 2018.

C8. **A.H.Qureshi**, Z.Tahir, G.Tariq, Y.Ayaz. Re-planning Using Delaunay Triangulation for Real Time Motion Planning in Complex Dynamic Environments, IEEE/ASME International Conference on Advanced Intelligent Mechatronics (AIM), pp. 905-911, Auckland, New Zealand 2018.

C7. **A.H.Qureshi**, Y.Nakamura, Y.Yoshikawa and H.Ishiguro. Show, Attend and Interact: Perceivable Social Human-Robot Interaction through Neural Attention Q-Network, Proceedings of IEEE/RAS International Conference on Robotics and Automation (ICRA),

pp.1639-1645, Singapore 2017.

C6. **A.H.Qureshi**, Y.Nakamura, Y.Yoshikawa and H.Ishiguro. Robot gains social intelligence through multimodal deep reinforcement learning, Proceedings of IEEE/RAS International Conference on Humanoid Robots, pp. 745-751, Cancun Mexico, 2016.

C5. **A.H.Qureshi**, S.Mumtaz, Y. Ayaz, and O. Hasan. Augmenting RRT*-Planner with Local Trees for Motion Planning in Complex Dynamic Environments, Proceedings of IEEE/RAS 19th International Conference on Methods and Models in Automation and Robotics (MMAR), pp. 657-662, Miedzyzdroje, Poland 2014.

C4. **A.H.Qureshi**, S.Mumtaz, Y.Ayaz, O.Hasan and W.Y.Kim. Adaptive Potential guided directional RRT*, Proceedings of International Conference on Robotics and Biomimetics (ROBIO), pp. 1887-1892, China, 2013.

C3. B.Ali, **A.H.Qureshi**, Y.Ayaz, N.Muhammad and W.Y.Kim. Human tracking by a mobile robot using 3D features, Proceedings of International Conference on Robotics and Biomimetics (ROBIO), pp. 2464-2469, Shenzhen, China, 2013.

C2. **A.H.Qureshi**, K.F.Iqbal, S.M.Qamar, F.Islam, Y.Ayaz and N.Muhammad. Potential guided directional-RRT* for accelerated motion planning in cluttered environments, Proceedings of International Conference on Mechatronics and Automation (ICMA), pp. 519-524, Takamatsu, Japan, 2013.

C1. S. M. Qamar, K. F. Iqbal, **A.H.Qureshi**, N. Muhammad, Y. Ayaz, and A. G. Abbasi A solution to Perceptual Aliasing through Probabilistic Fuzzy Logic and SIFT, Proceedings of IEEE/ASME International Conference on Advanced Intelligent Mechatronics (pp. 1393-1398). IEEE.

Workshop Papers

W10. R.Ni[G] and **A.H.Qureshi**. Physics-informed Neural Networks for Robot Motion under Constraints, ICRA 2024 RoboNerF: 1st Workshop On Neural Fields In Robotics.

W9. R.Ni[G] and **A.H.Qureshi**. Physics-informed Neural Motion Planning on Constraint Manifolds, ICRA 2024 workshop on A Future Roadmap for Sensorimotor Skill Learning for Robot Manipulation.

W8. Z.Wang[G] and **A.H.Qureshi**. DeRi-Bot: Learning to Collaboratively Manipulate Rigid Objects via Deformable Objects, CoRL 2023 workshop on Learning for Soft Robots 2023. [Spotlight]

W7. K.Norman[G] and **A.H.Qureshi**. Analysis of Continuous Learning Models for Robot Motion Planning, IEEE/RSJ IROS Workshop on Policy Learning in Geometric Spaces 2023. [Oral Presentation]

W6. R.Ni[G] and **A.H.Qureshi**. Progressive Learning for Physics-informed Neural Motion Planning, RSS Workshop on Symmetries in Robot Learning 2023. [Oral Presentation]

W5. D.Lawson[U] and **A.H.Qureshi**. Merging Decision Transformers, ICLR Workshop on Reincarnating Reinforcement Learning 2023. [Spotlight]

W4. R.Ni[G] and **A.H.Qureshi**. Neural Time Fields for Physics-Informed Motion Planning, ICLR Workshop on Neural Fields across Fields: Methods and Applications of Implicit Neural Representations 2023. [Best Paper]

W3. **A.H.Qureshi**, Y.Miao M.C.Yip. Active Continual Learning for Planning and Navigation, ICML Workshop on Real World Experiment Design and Active Learning 2020.

W2. **A.H.Qureshi**, M.C.Yip. Adversarial Reward and Policy Learning Via Variational Inverse Optimal Control, Bay Area Machine Learning Symposium, August 2018.

W1. **A.H.Qureshi**, Y. Nakamura, Y. Yoshikawa, H. Ishiguro. Robot Learns Responsive Behavior through Interaction with People using Deep Reinforcement Learning, 3rd International Symposium on Cognitive Neuroscience Robotics, Dec 2016.

SEMINAR AND INVITED TALKS

- Neural PDEs for Robot Mapping and Motion Planning, Param-Intelligence (PI) Seminar Series, Worcester Polytechnic Institute (WPI), USA, Nov 2024.
- Self-supervised Learning for Robot Motion Planning, Robotics Seminars, University of Michigan, Ann Arbor, USA, Oct 2024.
- Neural PDEs for Robot Motion Planning, CRUNCH Seminars, Division of Applied Mathematics, Brown University, USA, Aug 2024.
- Physics-informed Neural Time Fields for Robot Motion Planning under Constraints, IEEE/RAS ICRA Workshop on Neural Fields in Robotics (RoboNerF), Yokohama, Japan, May 2024.
- Learning Robot Manipulation Skills with Physics-based Models in the Human-centered Environments, NSF/NRI Meeting Workshop on Challenges and Opportunities for Dexterous Robotic Manipulation, USA, Apr 2024.
- Physics Informed Neural Networks for Robot Motion Planning, IEEE/RSJ IROS Workshop on Policy Learning in Geometric Spaces, USA, Oct 2023.
- Visual Robot Learning for Planning & Control in Unknown Environments, Robotics and Automation Society Chapter of IEEE Eastern North Carolina Section, USA, Mar 2022.
- Neural Task and Motion Planning in Unknown Environments, Brown University, USA, Nov 2021.
- Emergence of a Mutualistic Relationship between Motion Planning and Machine Learning for Scalable Robot Control, Neural Computation Chalk Talk Series, UC San Diego, La Jolla, CA, USA Oct 2020.
- Motion Planning Networks, University of Toronto, Canada (Virtual), Sep 2020.
- Deep Learning For Robotics, Neural Computing & Deep Learning Workshop, 6th Heidelberg Laureate Forum, Germany, Sep 2018.
- Learning-based motion planning and control, CRI Seminars, University of California San Diego, La Jolla, CA, USA, May 2018.
- Intrinsically Motivated Reinforcement Learning for Human-Robot Interaction in the Real-World, Artificial Intelligence Seminars, Osaka University, Japan, Nov 2017.
- Living with Robots- The Next Generation of Intelligent Machines, Information Technology University, Pakistan, Mar 2016.

- Sampling-based motion planning algorithms, Topics in Robotics Session, Osaka University, Japan, Apr 2015.

RESEARCH
GROUP

Current Post Doc Students

- Vittorio Giammarino, CS, Purdue University   Sep 2024 - Present

Current Ph.D. Students

- Hanwen Ren, CS, Purdue University   Jan 2022 - Present
- Zixing Wang, CS, Purdue University   Jan 2022 - Present
- Ruiqi Ni, CS, Purdue University   Jan 2022 - Present
- Yubin Koh, CS, Purdue University   Aug 2023 - Present
- Tassos Manganaris, CS, Purdue University   Aug 2023 - Present
- Yuchen Liu, CS, Purdue University   Aug 2023 - Present
- Qingyi Chen, CS, Purdue University   Aug 2024 - Present
- Daniel Chen, CS, Purdue University   Aug 2024 - Present

Current M.S. Students

- Shaswat Shukla, CS, Purdue University   Sep 2024 - Present
- Meenakshi Sundaram Manickam, ICON, Purdue University   Sep 2024 - Present

Current B.S. Students

- Noah Trupin, CS, Purdue University   Sep 2024 - Present
- George Wang, CS, Purdue University   Sep 2024 - Present
- Jeremy Lu, CS, Purdue University   Jun 2024 - Present
- Jun Kim, CS, Purdue University   Jan 2024 - Present
- Jainam Doshi, CS, Purdue University   Jan 2024 - Present
- Alexiy Buynitsky, CS, Purdue University   Aug 2023 - Present
- Guna Avula, CS, Purdue University   Jan 2023 - Present
- Xuyang Chen, CS, Purdue University   Sep 2021 - Present

Visiting Ph.D. Students Alumni

- Syed Talha Bukhari, CS, Purdue University   Aug 2022 - Aug 2024
- Zikang Xiong, CS, Purdue University   Jan 2022 - Sep 2023
  - co-advised with Prof. Suresh Jagannathan
- Jacob Johnson, ECE, UCSD   Aug 2021 - Oct 2023
  - co-advised with Prof. Michael Yip (ECE, UCSD)
- Manav Kulshrestha, CS, Purdue University   Aug 2022 - Jun 2023
- Zhiquan Wang, CS, Purdue University   Sep 2021 - Sep 2022
  - co-advised with Prof. Bedrich Benes

M.S. Thesis Students Alumni

- Krishnan N. Vidyaa, ECE, Purdue University (Co-Chair)   Aug 2022 - May 2024
  - Title: Multi-agent Trajectory Prediction for Autonomous Vehicles

- Abhinav K. Keshari, ECE, Purdue University (Co-Chair)   Oct 2021 - Apr 2023
  - Title: Vision-Language Model for Robot Grasping
- Kendal Norman, CS, Purdue University (Chair)   Aug 2021 - Jul 2023
  - Title: Analysis of Continuous Learning Models For Trajectory Representation
- Vivek Gupta, CS, Purdue University (Chair)   May 2022 - Jul 2023
  - Title: Multi-agent Neural Rearrangement Planning of Objects in Cluttered Environments

M.S. Students Alumni

- Vigneshwaran Dharmalingam, CS, Purdue University   Sep 2023 - Sep 2024
- Aathman Tharmasanthiran, CS, Purdue University   Sep 2023 - Sep 2024
- Gabriella Giachini, ME, Purdue University   Jun 2023 - May 2024
- Veera Adithya Dittakavi, ECE, Purdue University   May 2023 - Aug 2023
- Prabhpreet Singh Dir, AAE, Purdue University   Sep 2021 - Dec 2022
- Kartik A. Pant, AAE, Purdue University   Oct 2021 - May 2022
- Akshaj Uppala, CS, Purdue University   Aug 2022 - May 2023
- Shivam Bhat, CS, Purdue University   May 2023 - Dec 2023
- Joseph P. Kawiecki, ECE, Purdue University   Jan 2023 - Dec 2023
- Shyamvanshikumar Singh, CS, Purdue University   Nov 2022 - Dec 2023

B.S. Students Alumni

- Aakanksha Shripal, ECE, Purdue University   Sep 2023 - May 2024
- Daniel Chen, CS, Purdue University   Mar 2022 - May 2024
- Daniel Lawson, CS, Purdue University   Aug 2021 - May 2024
- Shyawn Zahid, CS, Purdue University   Feb 2022 - May 2022
- Latif Adurzada, Math, Purdue University   Feb 2022 - May 2022
- Vlada Volyanskaya, CS, Purdue University   May 2022 - Aug 2022
- Andrew Showalter, ME, Purdue University   Aug 2022 - Dec 2022
- Jeegn Dani, CS, Purdue University   Jan 2022 - Dec 2022
- Jacob Zietek, CS, Purdue University   Nov 2022 - Dec 2023
- Ashvin Iyer, CS, Purdue University   May 2022 - May 2023

GRANTS

External (Current)

- NSF IIS (FRR): Small: Human-centered Robot Manipulation Planning for Solving Object Handover Tasks in the Real-World. Role: PI (Solo). Budget: $389,468. Sep 2022 - Aug 2025
- AFRL/AFSOR DEPSCOR award: Compositional Learning from an Imperfect Primitive Skill Sets for Solving Complex Tasks. Role: PI. Budget: $548,112. Percentage of funding responsible ($73.5\% \approx$ $402,895). Jun 2024 - May 2026

TEACHING
- **Instructor**, CS458 Introduction to Robotics, Purdue University   Fall, 2024
- **Instructor**, CS558 Introduction to Robot Learning, Purdue University   Spring, 2024
- **Guest Lecturer**, CS197: Honors Seminar, Purdue University   Spring, 2024
- **Instructor**, CS49000 Introduction to Robotics, Purdue University   Fall, 2023
- **Instructor**, CS593000 Robotics, Purdue University   Spring, 2023

• **Guest Lecturer**, CS197: Honors Seminar, Purdue University	Spring, 2023
• **Instructor**, CS49000 Introduction to Robotics, Purdue University	Fall, 2022
• **Guest Lecturer**, CS397: Honors Seminar, Purdue University	Fall, 2022
• **Instructor**, CS593000 Robotics, Purdue University	Spring, 2022
• **Instructor**, CS592 Introduction to Robot Motion, Purdue University	Fall, 2021
• **Guest Lecturer**, CS397: Honors Seminar, Purdue University	Fall, 2021
• **Guest Lecturer**, CS591: Research Seminar, Purdue University	Fall, 2021
• **Teaching Assistant**, Advances in Robot Manipulation, UC San Diego	Spring, 2020
• **Co-Instructor**, Robot Reinforcement Learning, UC San Diego	Fall, 2019
• **Teaching Assistant**, Cognitive Neuroscience Robotics, Osaka University	Feb, 2016 - 2017
• **Teaching Assistant**, Circuits Analysis, NUST, PK	Fall, 2011

PROFESSIONAL ACTIVITIES

University Service:
- Purdue CS Robotics Curriculum Development: Introduced new and Purdue CS department's very first robotics courses for undergraduate (CS 458: Introduction to Robotics) and graduate (CS 558: Introduction to Robot Learning) students.
- Purdue CS Graduate Studies Committee, 2024-25
- Purdue CS Ph.D. Graduate Admissions, 2021-22, 2023-24
- Purdue CS Ph.D. Visit Day Committee, 2024
- Purdue CS Faculty Search, 2022-23
- Purdue CS Space Management Committee, 2021

Undergraduate Research and Outreach Activities:
- Mentor for FIRST Robotics Competition (FRC) at West Lafayette Community School Corporation, Spring 2024
- UG students lab visit: Hosted UG students' lab visit in Fall 2023 to showcase the live demos of ongoing projects. Coverage available https://purduecomputerscience.exposure.co/ahmed-qureshi?source=share-purduecomputerscience
- Participation in Purdue's SURF (Summer Undergraduate Research Fellowship) in Summer 2024.

Ph.D. Committees
- Shengqing Xia, CS Ph.D, Purdue University (Member)
    - PhD Preliminary Exam (Jun. 2024)
- Charles W Christoffer, CS PhD, Purdue University (Member)
    - PhD Preliminary Exam (July. 2022)
    - PhD Defense (Nov. 2023)
- Md Masudur Rahman, CS PhD, Purdue University (Member)
    - PhD Preliminary Exam (Mar. 2023)
    - PhD Defense (Sep. 2024)
- Rashmi Bhaskara, CS, Purdue University (Member)
- Shilong Lei, CS, Purdue University (Member)
- Joe K. Eappen, ECE, Purdue University (Member)
- Hojun Lee, ME, Purdue University (Member)
- Syed Hasan Amin Mahmood, CS, Purdue University (Member)
- Ruiqi Ni, CS, Purdue University (Chair)
- Hanwen Ren, CS, Purdue University (Chair)
- Zixing Wang, CS, Purdue University (Chair)

M.S. Committees
- Aniruddha Mukherjee, MS Thesis (TBD), CS, Purdue University (Member)
- Vidyaa N. Krishnan, MS Thesis (Apr. 2024), ECE, Purdue University (Co-chair)
- Kartik Anand Pant, MS thesis (Jul 2023), AAE, Purdue University (Member)
- Vivek Gupta, MS Thesis (Jul. 2023), CS, Purdue University (Chair)
- Kendal Norman, MS Thesis (Apr. 2023), CS, Purdue University (Chair)
- Abhinav K. Keshari, MS Thesis (Apr. 2023), ECE, Purdue University (Co-chair)

Conference Program Committee
- Area Chair, International Conference on Robot Learning 2023, 2024.
- Associate Editor*, IEEE International Conference on Intelligent Robots and Systems (IROS) 2023.
- Associate Editor*, IEEE International Conference on Robotics and Automation (ICRA) 2023.
- Deep Learning in Grasping and Manipulation I, Session Co-chair, IEEE International Conference on Robotics and Automation (ICRA) 2024.
- Motion Planning I, Session Co-chair, IEEE International Conference on Robotics and Automation (ICRA) 2024.
- Reactive and Sensor-Based Planning Session Co-chair, IEEE International Conference on Intelligent Robots and Systems (IROS) 2023.

* In IEEE Robotics conferences, the Associate Editor role is equivalent to area chair role in AI/ML conferences.

Journal Editorial Board Member
- Associate Editor, IEEE Transactions on Robotics (TRO) 2023-Present.
- Associate Editor, IEEE Robotics and Automation Letters (RA-L) 2022-Present.

Workshop Organization
- Organizer, workshop on Physics-informed Robot Learning for Motion Planning and Control, in submission to IEEE/RAS International Conference on Robotics and Automation (ICRA) 2025.
- Co-organizer, workshop on Machine Learning for Motion Planning, International Conference on Robotics and Automation (ICRA), May 2021.
- Organizer, workshop on Learning Representations for Planning and Control, IEEE/RSJ International Conference on Intelligent Robot and Systems (IROS), Macau, China, Nov 2019.

Government Activities
- NSF IIS Panelist: 2022

Reviewer
Journals:
- The International Journal of Robotics Research, 2024
- IEEE Transactions on Robotics 2021, 2022
- IEEE Robotics and Automation Letters 2020, 2022, 2024
- Cambridge Robotica 2014

Conferences:

- IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS) 2018, 2020, 2022, 2024
- Conference on Neural Information Processing Systems (NeurIPS) 2021, 2022
- IEEE International Conference on Representation Learning (ICLR) 2019, 2020, 2021, 2022
- IEEE International Conference on Robotics and Automation (ICRA) 2019, 2020, 2022, 2024
- Robotics: Science and Systems (RSS) 2021, 2022
- Thirty-Seventh AAAI Conference on Artificial Intelligence 2022

Society Membership:
- IEEE, Robotics and Automation Society   2021 - Present
- IEEE, Member   2021 - Present

REFERENCES   Available upon request