Curriculum Vitae

Taher Deemyad, Ph.D.
Assistant Professor,
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ISU Robotics Lab Director
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Education

2016-2021	Ph.D., Mechanical Engineering, Idaho State University, USA
2014-2016	Master of Science, Mechanical Engineering, Idaho State University, USA
2003-2010	Bachelor of Science, Mechanical Engineering, Azad University, Tehran, Iran.

Research & Work Experiences

From 2022	Assistant Professor, Mechanical Engineering Department, ISU
2021-2022	Visiting Assistant Professor, Mechanical Engineering Department, ISU
From 2021	Robotic Research Lab (Deemyad Lab) Director, ISU

Teaching Experiences & Mentorship

2019-2024	Structured Programming (ME 1165), Engineering Dynamics (ME 2220), Thermodynamics (ME 3307), Kinematics and Dynamics of Mach (ME 3320), Machine Design (ME 3323), Mechanics of Materials (ME 3350), Introduction to Robotics (ME 4424/5524), Mechatronics (ME 4425/5525), Vibration Analysis (4440/5540), Advanced Kinematic Design (ME 6644), Robotic Grasping/Manipulation (ME 6648)
2021-2024	In the Robotics Lab, Mentoring **7** graduate students & over 15 undergraduate students in the research projects
Summer 2023	Mentoring one undergraduate student for the NSF REU
2020-2023	Mentoring 6 groups (each group 4 students) of undergraduate students for their Senior Design project

Professional & Computer Languages Skills

Software	• SolidWorks, AutoCAD, Catia, MATLAB, Mathematica, Python, ROS, ArtTreeKS, RobotStudio
Certified Robotics Training	• **Certified Teacher of ABB Company** for **SMART** program in **STEM**, 2023 • Robot programming (I) training, ABB Motlow State Community College, 2022 • RobotStudio training, ABB Motlow State Community College, 2022
Others	• Additive manufacturing and motion capture system (Lab Director, 2015-2016)

Patents

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- **Taher Deemyad**, Wesley Thomas, Parker Wegrowski, Jacob Lemrick, Kyler Bingham, and Anish Sebastian. Non-provisional patent application for **"Lightweight Foldable Robotic Arm for Drones" Application Serial No.: 18/316,532 Filing date: May 12, 2023**
- **Taher Deemyad,** and Safal Lama. Provisional patent application for **"Pin Array Rotary Gripper" Application Serial No.: 63/514,458 Filing date: 07/19/2023**
- **Taher Deemyad**, Anish Sebastian, and Alba Perez-Gracia Provisional patent application for **"Agricultural Roguing Machine" Application Serial No.: 63/104,937 Filing date: 10/23/2020**

Research Grant

- **Taher Deemyad (PI),** NSF EPSCoR Idaho Community-engaged Resilience for Energy-Water (E-W) Systems (I-CREWS) 2024, "Smart Robotic System for Water and Energy Monitoring and Management in Agriculture", **(Pending)**
- Amanda Rynes (PI) & **Taher Deemyad (Co-PI),** CAES Collaboration 2024, "Enhancing Nuclear Power Plant Security with Dog Robot Surveillance Systems", **(Not Funded)**
- **Taher Deemyad (PI),** NASA 2024, "Empowering Idaho's Higher Education: NASA STEM Outreach & Robotics Initiative" **(Not Funded)**
- **Taher Deemyad (PI),** NASA 2024, "Revolution in Space Manufacturing: Innovative Additive Manufacturing Method for Zero-Gravity Environments" **(Not Funded)**
- **Taher Deemyad** & Minhaz Zibran**,** ISU CAES Seed grants 2024, Mobile Robot for Physical Security of the Nuclear Power Plant **(Funded)**
- **Taher Deemyad** & Khadijeh Bazargani, CERE 2024, "An Innovative Solution for Autonomous Precision Pest Control", CERE **(Funded)**
- **Taher Deemyad** & Amir Hafezi, CERE 2024, "Advancing Ecological Monitoring in Volcanic Environments", CERE **(Not Funded)**
- Jae Ryu (PI), **Taher Deemyad (Co-PI)**, IGEM HERC 2023, Air-ground robotics for field scouting to sustain agricultural practices in Idaho (**Not Funded**)
- **Taher Deemyad** & Minhaz Zibran**,** ISU CAES Seed grants 2023, Mobile Robot for Physical Security of the Nuclear Power Plant **(Funded)**
- **Taher Deemyad (PI),** NSF 2023**,** "CAREER: Enhancing UAV Capabilities for Precision Agriculture by Integrating a Foldable Robotic Arm, Advanced Grasping Mechanism, and Efficient Control System", (**Not Funded**)
- **Taher Deemyad,** ISU Museum of History 2023, "Robotic-Dinosaur" **(Funded)**
- Vaibhav Yadav (PI), **Taher Deemyad (Co-PI),** CAES Collaboration Program Development 2023**, "**Enhancing the Security System of Nuclear Power Plants by Implementing a Network of Drones and Mobile Robots", (**Not Funded**)
- **Taher Deemyad** & Rajib Mahamud, CERE 2023, "Establishing Educator Seminar Series/Conference and Regional Tribe Summer Camp at ISU", (**Not Funded**)
- **Taher Deemyad** & Sara Sourani, CERE 2023, "A Smart Autonomous Ground Vehicle with the Ability to Adapt Its Size to Environments", (**Funded**)

- **Taher Deemyad** & Kyler Bingham, CERE 2023, "Advanced Robotic Arm and Storage System for UAVs", (**Funded**)
- **Taher Deemyad** & Shaibal Das, CERE 2023, "Leading a Network of Autonomous Ground Vehicles by a Central Controlling System for Agricultural Purposes", (**Funded**)
- **Taher Deemyad** & Khadijeh Bazargani, CERE 2023, "Economic Effects of Agricultural Automation in Idaho", (**Funded**)
- Khadijeh Bazargani (Advisor: **Taher Deemyad)**, Summer Research/Creative Activity Grant, ISU Graduate School 2023, "Leveraging AI to Quantify the economy of Automation & Robots on Agricultural Productivity", (**Funded**)
- **Taher Deemyad,** CAES Summer Visiting Faculty 2023**, "**Improvement in Security Systems of Nuclear Facilities Using Autonomous 4-legged Robots and Aerial Drones Equipped with a Variety of Sensors", (**Not Funded**)
- **Taher Deemyad,** Office for Research, funding for travel/training, 2022: "A complete advanced robot training at ABB training center at Michigan and receive the ABB certificate", (**Funded**)
- **Taher Deemyad (PI)**, CAES Seed Grant proposal, 2022 "Experimental and numerical investigation of an integrated HVAC system", **(Not Funded)**
- **Taher Deemyad (Co-PI)**, CAES Seed Grant proposal, 2022 "Experimental Investigation of Volumetric Plasma Enhanced Additive Manufacturing Process", **(Not Funded)**
- **Taher Deemyad,** Idaho NASA EPSCoR Collaboration Grant, 2022, (**Funded**)
- **Taher Deemyad (PI)**, Idaho State Board of Education (SBOE) Grant for STEM, 2021-2022: "Advanced Grasping Mechanism for Drones with the Ability to Detect and Sample Small Objects", (**Funded**)
- **Taher Deemyad (PI),** Center for Ecological Research & Education (CERE), 2021-2022: "Improvement of Obstacle Avoidance and Plant Detection Systems for an Autonomous Ground Vehicle for Agricultural Purposes", (**Funded**)
- **Taher Deemyad (PI),** Office for Research Internal Small Grant Program, 2021-2022: "A Robotic System for Handling and Packing Fruits in Grocery Stores", (**Funded**)
- **Taher Deemyad (PI),** National Science Foundation: "The Foundational Research in Robotics: A robotic hand for handling and packing of irregular shape products in stores", (In preparation)

Peer-Reviewed Articles

2024	1) James Glencoe, and **Taher Deemyad** "Enhancing Tig Welding Accessibility for Upper Extremity Amputees: A Wire Feeder Mechanism Activated by EMG Signal", International Mechanical Engineering Congress and Exposition (IMECE), ASME (Under review)
2024	2) Kyler Bingham, Amir Hafezi, Anish Thapa, Sara Sourani Yancheshmeh, Christopher Zakrevski, Matthew Berry, Shaibal Das, Payton Walker, Juan Cortez Lopez, Dominik Thompson, Robert J. Gay, and **Taher Deemyad** "Biomimetic Design and Development of an Oryctodromeus-Inspired Robotic Dinosaur Skeleton", International Mechanical Engineering Congress and Exposition (IMECE), ASME (Under review)
2024	3) Kyler Bingham, Sara Sourani Yancheshmeh, Greesh Vaidya, Arya Ebrahimpour, and **Taher Deemyad** "Advanced Material Selection and Design Strategies for Optimized Robotic Systems", International Mechanical Engineering Congress and Exposition (IMECE), ASME (Under review)

2024 4) Kyler Bingham, and **Taher Deemyad**, “Material, Torque, and Structural Study of a Foldable Robotic Arm for Aerial Drones", International Mechanical Engineering Congress and Exposition (IMECE), ASME (Under review)

2024 5) Sara Sourani Yancheshmeh, Arya Ebrahimpour, **Taher Deemyad**, “Optimizing Chassis Design for Autonomous Vehicles in Challenging Environments Based on Finite Element Analysis and Genetic Algorithm", International Mechanical Engineering Congress and Exposition (IMECE), ASME (Under review)

2024 6) Bingham, Kyler C., and **Taher Deemyad** " Design and Kinematic Analysis of an Aerial Robotic Arm for Precision Agriculture", In Intermountain Engineering, Technology, and Computing Conference (I-ETC), May-2024, IEEE

2024 7) Hafezi, Amir, and **Taher Deemyad** "Autonomous Surveillance Breakthrough by Implementing Facial Recognition in Dog Robots”, In Intermountain Engineering, Technology, and Computing Conference (I-ETC), May-2024, IEEE

2024 8) Das, Shaibal, and **Taher Deemyad** " Innovative Automatic Tool Changing Mechanism for Robotic Arms”, In Intermountain Engineering, Technology, and Computing Conference (I-ETC), May-2024, IEEE

2024 9) Sourani Y., Sara, and **Taher Deemyad** " Optimizing Structural Integrity: Stress Analysis of a Chassis Frame Using SolidWorks”, In Intermountain Engineering, Technology, and Computing Conference (I-ETC), May-2024, IEEE

2024 10) Sharma, Ujwal, Uma Shankar Medasetti, **Taher Deemyad**, Mustafa Mashal, and Vaibhav Yadav. 2024. "Mobile Robot for Security Applications in Remotely Operated Advanced Reactors" Applied Sciences 14, no. 6: 2552. https://doi.org/10.3390/app14062552

2024 11) Bazargani, Khadijeh, and **Taher Deemyad** "Automation’s Impact on Agriculture: Opportunities, Challenges, and Economic Effects", Robotics, 2024; 13(2):33. https://doi.org/10.3390/robotics13020033

2023 12) Bingham, Kyler C., Matthew Hessler, Safal Lama, and **Taher Deemyad**. 2023. "Design and Implementation of a Compliant Gripper for Form Closure of Diverse Objects" Applied Sciences 13, no. 17: 9677. https://doi.org/10.3390/app13179677

2023 13) Safal Lama and **Taher Deemyad** "Using A Rotary Spring-Driven Gripper to Manipulate Objects of Diverse Sizes and Shapes", *Applied Sciences*, 2023; 13(14):8444

2022 14) Wesley Thomas, Parker Wegrowski, Jacob Lemrick, and **Taher Deemyad** “Lightweight foldable robotic arm for drones”, In Intermountain Engineering, Technology, and Computing Conference (I-ETC, May-2022). IEEE

2022 15) Parker Wegrowski, Jacob Lemrick, Wesley Thomas, and **Taher Deemyad** “Advanced Folding Robotic Arm for Quadcopters”, In Intermountain Engineering, Technology, and Computing Conference (I-ETC, May-2022). IEEE

2022 16) Jacob Lemrick, Wesley Thomas, Parker Wegrowski, and **Taher Deemyad** “Sarrus Linkage Aerial Drone Arm”, In Intermountain Engineering, Technology, and Computing Conference (I-ETC, May-2022). IEEE

2021 17) **Taher Deemyad** and Anish Sebastian “HSL Color Space for Potato Plant Detection in the Field”, Fourth IEEE International Conference on Electrical, Computer and Communication Technologies (ICECCT)

2021	18) **Taher Deemyad**, Vincent Akula, Anish Sebastian, "Compression Analysis Tests for Prototypes Made of Different Polymers ", International Mechanical Engineering Congress and Exposition (IMECE), ASME
2021	19) **Taher Deemyad**, Vincent Akula, Anish Sebastian, "Mechanisms Design for the Hinge & Battery Lifetime Tests for a Prototype ", International Mechanical Engineering Congress and Exposition (IMECE), ASME
2021	20) **Taher Deemyad** and Anish Sebastian "Mobile Manipulator and EOAT for In-Situ Virus Detection and Removal", In 5th IFToMM Symposium on Mechanism Design for Robotics (MEDER), Springer
2020	21) **Taher Deemyad**, Omid Heidari, and Alba Perez-Gracia "Singularity design for RRSS mechanism", In USCToMM Symposium on Mechanical Systems and Robotics (MSR), pages287–297. Springer
2020	22) **Taher Deemyad**, Ryan Moeller, and Anish Sebastian "Chassis design and analysis of an autonomous ground vehicle (AGV) using genetic algorithm", In Intermountain Engineering, Technology, and Computing Conference (I-ETC, Oct-2020). IEEE
2020	23) Ryan Moeller, **Taher Deemyad**, and Anish Sebastian "Autonomous navigation of an agricultural robot using RTK GPS and Pixhawk", In Intermountain Engineering, Technology, and Computing Conference (I-ETC, Oct-2020). IEEE
2018	24) **Taher Deemyad**, Neda Hassan Zadeh, and Alba Perez-Gracia "Coupling mechanisms for multi-fingered robotic hands with skew axes", In 4th IFToMM Symposium on Mechanism Design for Robotics (MEDER), pages 344–352. Springer
2016	25) **Taher Deemyad.** "Design of five-fingered underactuated hand for two-position tasks" In Master's Thesis, Idaho State University

Oral Presentation

2022	**Taher Deemyad,** "Foldable Robotics arm for Quadcopters", **NASA STEM Better Together 2022**
2021	**Taher Deemyad, "**MOBILE MANIPULATOR AND EOAT FOR IN-SITU VIRUS DETECTION AND REMOVAL", top 6 in 3MT competition, ISU
2021	**Taher Deemyad** "Autonomous Ground Vehicle for Virus Detection and Removal", 7th ISU Graduate Research Symposium
2016	**Taher Deemyad** and Alba Perez-Gracia "Coupled actuation by using Bennett linkages in multi-fingered robotic hand", ISU Graduate Research Symposium

Poster Presentation

2024	Kinematica Club members, **Taher Deemyad** "Designing a Robotic Dinosaur Skeleton Inspired by Oryctodromeus Biomimetic Locomotion", In Intermountain Engineering, Technology, and Computing Conference (I-ETC), May-2024
2024	Amir Hafezi, **Taher Deemyad** "Autonomous Surveillance Breakthrough by Implementing Facial Recognition in Dog Robots", In Intermountain Engineering, Technology, and Computing Conference (I-ETC), May-2024

2024	Khadijeh Bazargani, **Taher Deemyad** "An Innovative Solution for Autonomous Precision Pest Control", In Intermountain Engineering, Technology, and Computing Conference (I-ETC), May-2024
2023	Carlos A. Rivas, **Taher Deemyad** "Automatic Tool Changing Mechanism for Industrial Robotics Arms", Idaho Conference on Undergraduate Research (ICUR)
2023	Ujwal Sharma, Uma Shankar Medasetti, Mustafa Mashal, **Taher Deemyad**, Vaibhav Yadav "Mobile Robot for Security Applications in Remotely Operated Advanced Reactors", Center for Advanced Energy Studies (CAES)
2022	Parker Wegrowski, Wesley Thomas, Jacob Lemrick**, Taher Deemyad** "Advanced Folding Robotic Arm for Quadcopters", ISU Undergraduate Research Symposium
2022	Jacob Lemrick, Wesley Thomas, Parker Wegrowski, **Taher Deemyad** "Single Actuator Sarrus Linkage Arm for Aerial Drones", ISU Undergraduate Research Symposium
2022	Wesley Thomas, Parker Wegrowski, Jacob Lemrick, **Taher Deemyad** "Lightweight Robotic Arm for Drones", ISU Undergraduate Research Symposium
2019	**Taher Deemyad** and Anish Sebastian "Simulation of chassis & stress analysis for autonomous terrain robot", Idaho National Lab
2019	**Taher Deemyad** and Anish Sebastian "In-situ plant virus detection using a scalable, multi-agent robotic sensing and learning collaborative system", Idaho National Lab
2016	**Taher Deemyad** and Alba Perez-Gracia "Design of a five-fingered underactuated hand for two-position tasks", ISU Graduate Research Symposium
2015	**Taher Deemyad** and Alba Perez-Gracia "Design of a five-fingered robotic hand with using pulley-belt system", ISU Graduate Research Symposium

Awards & Scholarships

2023	Receive FY23 Year End Office of Research Award, ISU
2020	Selected for the Grant Writing Fellowship Program, ISU
2019	The Frank A. & Becky R. Scholarship, ISU
2016	The Mechanical Engineering Department's GATE Scholarship, ISU

Professional Activities & Affiliations

Memberships

Former Member of the American Society of Mechanical Engineers (ASME)

Former Member of the Institute of Electrical and Electronics Engineers (IEEE)

Former Member of the Robotics and Automation Society (RAS)

Former Member of Phi-Kappa-Phi Honor Society

Professional service in journals, conferences, and panels

- Engineering track chair of Intermountain Engineering, Technology, and Computing Conference (I-ETC), 2025
- Subject Matter Expert (SME) for a NASA L'SPACE Academy proposal on an autonomous robotic arm with Ohio State University, in collaboration with NASA Marshall Space Flight Center, June 2024.
- Invited external reviewer for the South Dakota Board of Regents' Competitive Research Grant Program, for precision agriculture and autonomous vehicles, June 2024
- Engineering track chair of Intermountain Engineering, Technology, and Computing Conference (I-ETC), 2024
- Reviewer of Intermountain Engineering, Technology, and Computing Conference (I-ETC), 2023
- Reviewer of Mathematics Journal (MDPI), 2023
- Reviewer of Machines Journal (MDPI), 2023
- NSF Reviewer, 2023
- Co-Chair of Intermountain Engineering, Technology, and Computing Conference (I-ETC), 2023
- Reviewer of Agronomy Journal (MDPI), 2022
- Reviewer of IEEE International Conference on Robotics and Automation (ICRA), 2021
- Reviewer of Machines Journal (MDPI), 2021

Synergic Activities

- The end-of-year robotics projects event (open to the public), Robotics Lab, ISU, April-2024
- Education and Community Engagement: Century High School, Idaho, Pocatello, 2024
- Education and Community Engagement: Pocatello High School, Idaho, Pocatello, 2024
- Leader of Robotics and 3D printing Technology section in **ISU Science Trek** for 3rd, 4th, and 5th grade students, May-2023
- Having a table at the Shoshone-Bannock Jr./Sr. High School STEM Night, 2023
- Robotic workshop for local LDS Young Men's program, ISU, November-2022
- Invited speaker at Hispanic Youth Leadership Symposium at ISU, October-2021
- Counselor in "Summer Robotics and Engineering Camps" for junior high students (College of Science and Engineering-ISU) Summer-2018
- Contribution to the Bengal STEM Day to setting up the ME department table - 2023

University and Department Service Activities

- Member of the Thesis Committee (Advisor) of Four ME Students, 2023
- Member of the Dissertation/Thesis Committee of more than 10 students (MCE/CE/NE) 2023-2024
- Member of the Academic Integrity Council 2023-2026
- Transferring Two-Year Associate Degree Students to ISU's Mechanical Engineering, 2023
- Member of Search Committee, 2022-2023
- Member of Recruitment Committee, 2022-2023
- Member of Tenure and Promotion Committee, 2022-2023
- Founder and Supervisor of the Kinematica Club (student Robotic Club) at ISU, 2022