Roya Salehzadeh, Ph.D.

Assistant Professor

Ingram School of Engineering
Texas State University

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EDUCATION

Ph.D. Mechanical Engineering | The University of Alabama, Tuscaloosa, AL *2019–2023*
M.Sc. Computer Science | The University of Alabama, Tuscaloosa, AL *2022–2023*
M.Sc. Mechanical Engineering | Amirkabir University of Technology, Tehran, Iran *2011–2013*
B.Sc. Mechanical Engineering | Urmia University, West Azerbaijan, Iran *2005–2010*

PROFESSIONAL EXPERIENCE

Assistant Professor | Texas State University, San Marcos, TX *Aug 2026*
Lead the Neuroadaptive Robotics and Interaction (NARI) Lab focused on human–robot interaction, brain–computer interfaces, and neuroadaptive systems.

Assistant Professor | Lawrence Technological University, Southfield, MI *2023–2026*
Lead the Human Emotions and Robotics (HERO) Lab focused on human–robot interaction, brain–computer interfaces, and neuroadaptive systems. Develop and teach robotics/AI courses (Mechatronics; Unified Robotics III/IV; BCI), supervise research assistants and capstones, and build lab infrastructure and curriculum.

Faculty Advisor | LTU Centrepolis Accelerator, Southfield, MI *2025–2026*
Mentor interdisciplinary student teams on micro-drone and digital-manufacturing projects; guide software design, system integration, and prototype development in a collaborative, research-driven environment.

Graduate Teaching Assistant | The University of Alabama, Tuscaloosa, AL *Sep 2020–Aug 2023*

Course Development & Industry Collaboration

- Co-developed **15 modular courses** for the new **B.S. in Manufacturing Systems Engineering**.
- Helped build the **Alabama IMaDE** (Integrated Manufacturing and Design) Center through partnerships with **Mercedes-Benz U.S. International**, **EBZ SysTec**, **Intelitek**, **Learning Labs**, **Rockwell Automation**, and **TransfrVR**.
- Authored lab manuals and hands-on modules integrating robotics, PLCs, and digital-twin workflows.

Leadership & Teaching

- Led senior design teams in automation and smart manufacturing projects.
- Taught/assisted: **Basics of Robotics**, **Programmable Logic Controllers**, **Basics of Material Handling**, **Instrumentation & Control Components**, **Engineering Analysis**.

Mechanical Design Engineer | Iran Industrial Vibrations Co., Tehran, Iran *2017–2018*
Contributed to design and development of flexible expansion joints for industrial and household applications.

Researcher | Niroo Research Institute, Tehran, Iran *2013–2014*

Performed dynamic parameter identification for turbines/governors across 30 hydropower plants; supported gas turbine technology roadmapping.

RESEARCH INTERESTS

- Robotics & Mechatronics (*UA priority*)
- Advanced Manufacturing & Digital Twins (*Integrated & Interconnected Systems*)
- Human–Robot Interaction & Robot Decision-Making
- Brain–Computer Interfaces & Neural Decoding
- AI/ML for Multimodal Sensing

PUBLICATIONS

[1] Roya Salehzadeh, Corbin Ortolan, Abhinandan Reddy Mogulla, Ahmed Khan Mohammed Zia, Samuel Stepanek, Yeen K Lee, and James A Mynderse. "System Design and Evaluation of a Lightweight Micro-UAV for Emergency Response". In: *Drones* 10.6 (2026), p. 413.

[2] Roya Salehzadeh, Fareed Bordbar, Xiaoti Fan, Soroush Korivand, Glen Merritt, Darrin J Griffin, Christian Cousin, and Nader Jalili. "Teleoperated Communication Robot: A Law Enforcement Perspective". In: *ACM Transactions on Human-Robot Interaction* 14.2 (2025), pp. 1–23.

[3] Xiaoti Fan, Roya Salehzadeh, Soroush Korivand, Fareed Bordbar, Christian Cousin, Darrin J Griffin, and Nader Jalili. "Exploring law enforcement officers' expectations and attitudes about communication robots in police work". In: *Human Technology* 20.1 (2024), pp. 25–44.

[4] Roya Salehzadeh, Harish Bezawada, and Chris S Crawford. "BCI Exploration of User Responses to Vulnerable and Expressive Robot Behaviors". In: *Companion of the 2024 ACM/IEEE International Conference on Human-Robot Interaction*. 2024, pp. 925–929.

[5] Roya Salehzadeh and James A Mynderse. "Board 143: Work in Progress: Mind and Computer: Integration of Brain-Computer Interfaces in Engineering Curricula". In: *2024 ASEE Annual Conference & Exposition*. 2024.

[6] Roya Salehzadeh, Gustavo Galvani, Anahita Zargarani, Nader Jalili, and Daniel J Fonseca. "Educating the Workforce of the 21st Century through Smart Manufacturing Systems in the Classrooms". In: *2023 ASEE Annual Conference & Exposition*. 2023.

[7] Roya Salehzadeh, Brian Rivera, Kaiwen Man, Nader Jalili, and Firat Soylu. "EEG Decoding of Finger Numeral Configurations With Machine Learning". In: *Journal of Numerical Cognition* 9.1 (2023), pp. 206–221.

[8] Roya Salehzadeh, Firat Soylu, and Nader Jalili. "A comparative study of machine learning methods for classifying ERP scalp distribution". In: *Biomedical Physics & Engineering Express* 9.4 (2023), p. 045027.

[9] Roya Salehzadeh, Fareed Bordbar, Darrin J Griffin, Christian Cousin, and Nader Jalili. "Public Perception, Privacy, Safety, and Ethical Considerations of Communication Robots in Law Enforcement". In: *2022 31st IEEE International Conference on Robot and Human Interactive Communication (RO-MAN)*. IEEE. 2022, pp. 1586–1591.

[10] Roya Salehzadeh, Jiaqi Gong, and Nader Jalili. "Purposeful Communication in Human-Robot Collaboration: A Review of Modern Approaches in Manufacturing". In: *IEEE Access* (2022).

[11] Fareed Bordbar, Roya Salehzadeh, Christian Cousin, Darrin J Griffin, and Nader Jalili. "Analyzing Human-Robot Trust in Police Work Using a Teleoperated Communicative Robot". In: *2021 30th IEEE International Conference on Robot & Human Interactive Communication (RO-MAN)*. IEEE. 2021, pp. 919–924.

[12] Jafar Aghayari and Roya Salehzadeh. "Dynamic Modeling and Identification of The Hydro Turbine Using Field Test Data (Case Study: Abbaspour Power Plant)". In: *Journal of Dam and Hydroelectric Powerplant* 7.25 (2020), pp. 73–63.

[13] Roya Salehzadeh, Nicholas Candelino, Mohammad Javad Khodaei, Amin Mehrvarz, and Nader Jalili. "Parameter Sensitivity Analysis of Piezoelectrically-Actuated Flexural/Torsional Vibrating Beams". In: *Dynamic Systems and Control Conference*. Vol. 84287. American Society of Mechanical Engineers. 2020, V002T38A008.

[14] Roya Salehzadeh, Firooz Bakhtiari Nejad, and Mahnaz Shamshirsaz. "Vibration control of a rotating cantilever beam using piezoelectric actuator and feedback linearization method". In: *arXiv preprint arXiv:2004.11703* (2020).

[15] Roya Salehzadeh, Mohammad Sadeghi, Firooz Bakhtiari-Nejad, and Mahnaz Shamshirsaz. "Using fuzzy logic in classical rotating beam vibration controller by piezoelectric". In: *Conf Iranian Aerosp Soc*. Vol. 13. 27. 2014, p. 16.

MANUSCRIPTS IN PREPARATION

Sean Hinkle, **Roya Salehzadeh**, Corey Bohil. *Machine Learning Analysis of Pupillary Responses in Virtual Reality for Presence Detection.*

Sean Hinkle, **Roya Salehzadeh**, Corey Bohil. *Multimodal Deep Learning for Presence Detection: Integrating Pupillometry and Finger Tapping in VR.*

TEACHING EXPERIENCE

Statics

Unified Robotics III (Engineering Dynamics, Digital Twin, PLC)

Mechatronics

Basics of Robotics (UA)

Programmable Logic Controllers (UA)

Brain–Computer Interfaces

Unified Robotics IV (Introduction to Machine Learning)

Engineering Analysis (UA)

GRANTS, HONORS & AWARDS

Grant Proposals (Pending)

Integrated, Low-cost Machine Learning for Precision Agriculture (PA) with Autonomous Data Collection and AI Analytics
USDA, Co-PI

Digital-Twin Systems for Precision Crop and Water Management in Small-Farm Greenhouses and Hoophouses
USDA–NIFA, Co-PI

Closed-Loop Neuroadaptive Autonomy for Resilient Human–Machine Teaming in High-Stress Missions
DOD–SBIR, PI

SURGENT: Digital Twin Enabled Modular Manufacturing Architecture
DOD, Co-PI **Dissociating category learning systems with pupillometry and machine learning**

NIH Small Research Grant Program, Consultant

Awarded Grants

Post-Fire Intelligence Drone (PFID): Modular Imaging & Hazard Detection
Mutually Assured Development, LLC, Faculty Advisor (supported by LTU's Centrepolis Accelerator) 2025–2026

Micro UAV Design
Mutually Assured Development, LLC, Faculty Advisor (supported by LTU's Centrepolis Accelerator) 2025

MRI: Acquisition of fNIRS System for Interdisciplinary Neuroscience
NSF, Senior Personnel 2023–2024

LTU SEED Grant ($5,000)
Lawrence Technological University, PI 2023–2024

Honors & Recognition

Graduate Council Fellowship — *The University of Alabama* 2019
Outstanding Teaching Award — *UA Department of Mechanical Engineering* 2022
Public Engagement Learning Community Program Award — *UA* 2022
ASME IMECE NSF Student Travel Grant — *NSF* 2022
Semi-Finalist, 3-Minute Thesis — *UA* 2022

MENTORING EXPERIENCE

Faculty Advisor, LTU Centrepolis Accelerator *2025–Present*
Mentoring startups and a master's student on industry-focused research and commercialization.

Undergraduate Research Mentoring *2023–2024*
Supervised EEG signal analysis and drone control projects; launched LTU's first Brain–Drone Race.

Master's Student Mentoring, LTU *2023–2024*
Guided graduate projects in robotics and applied AI.

HERO Lab Research Supervision *2023–Present*
Supervised research assistants in BCI and robotics; established reproducible ML pipelines.

Course & Capstone Mentoring *2023–Present*
Advised projects in Unified Robotics III/IV and Mechatronics (ML, PLCs, Emulate3D).

SERVICE & PROFESSIONAL ACTIVITIES

Administrative & Departmental Service

- Undergraduate Coordinator, Mechanical, Robotics, and Industrial Engineering, LTU *Sep 2025–Present*

Professional Service

- NSF Panelist
- Peer Reviewer: *Computers & Education*, *ACM Transactions on HRI*, *IEEE RA-L*, *ACM/IEEE HRI*
- Faculty Advisor, LTU Centrepolis Accelerator (2025–Present)

Institutional & Community Engagement

- Rockwell Automation Lab tours and campus demos for prospective students/industry partners
- Recruitment coordination and RA/intern onboarding programs
- Technical workshops (Python, ROS 2, PLC programming)

TECHNICAL EXPERTISE

Programming	Python, MATLAB, SPSS
Machine Learning	NumPy, Pandas, SciPy, scikit-learn, TensorFlow, PyTorch
Neuroscience Tools	MNE-Python, EEGLAB, ERPLAB
Robotics Platforms	ROS1/ROS2, MoveIt, Nav2, URCaps/PolyScope
Simulation/Digital Twin	Gazebo, RViz, Simulink, Unreal Engine, Emulate3D, CoppeliaSim
Controls/Automation	PLC (Allen-Bradley/CCW), Ladder Logic
Computer Vision	OpenCV, PCL

PROFESSIONAL DEVELOPMENT

Certifications

- Grant Writing Program (USF)
- Machine Learning (Coursera)
- Fundamentals of Reinforcement Learning (Coursera)
- Neural Networks & Deep Learning (Coursera)
- ROS for Beginners (Udemy)

Memberships

- ACM (2024–Present)
- IEEE (2023–Present)
- ASME (2019–Present)
- SWE (2022–Present)

Last updated: August 20, 2026