

# Talha Zaidi

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## SUMMARY

- Ph.D. researcher in AI/ML working across foundation models, generative modeling, RL, and representation learning.
- Experienced in **Vision-Language/Action model, Diffusion models, Latent representations and Policy refinements.**
- Hands-on with **PyTorch, ROS 2, Hugging Face/Transformers, LoRA/PEFT, CUDA, & scalable ML experimentation.**
- Published in leading AI venues with experience turning research ideas into working models and evaluations.

## PROFESSIONAL SKILLS

**RL & Decision-Making:** Offline/online RL, imitation learning, policy optimization/refinement, long-horizon planning  
**Generative & Representation Learning:** Diffusion models, VAEs, latent skills, sequence modeling, world models.  
**Foundation Models:** Vision-language models, VLA models, LoRA/PEFT, preference-based fine-tuning, RLHF/GRPO  
**Embodied AI & Robotics Tools:** Contact-rich manipulation, ROS 2, MuJoCo, RoboSuite, D4RL/Adroit, Isaac sim.  
**Programming ML Systems:** PyTorch, Python, C++, Linux, CUDA, GPU training, MATLAB/Simulink

## EDUCATION

### Kansas State University

PhD Candidate in Computer Science | GPA: 3.9/4.00

Advisor: Dr. Arslan Munir ([link](#))

Research Focus: Reinforcement Learning, Generative AI, Foundation Models, and Machine Learning.

Summer 2026

Manhattan, KS, USA

### Istanbul Medipol University

M.S. in Biomedical Engineering | GPA: 3.7/4.00

Research Focus: Artificial Intelligence, Brain-Machine Interface (BMI)

Dec 2020

Istanbul, Turkey

### University of Engineering and Technology, Lahore

B.S. in Mechatronics and Control Engineering | GPA: 3.3/4

Research Focus: Machine Vision (Image Processing), Robotics

Aug 2014

Lahore, Pakistan

## PROFESSIONAL EXPERIENCE

### ISCAAS Lab, Kansas State University ([link](#))

Graduate Research Assistant

Aug 2021–Present

Manhattan, USA

**Research Focus:** Developing reinforcement learning, generative modeling, and representation learning methods for embodied AI, long-horizon robotic decision-making, and autonomous systems.

- **Generative Decision Models (GRALP, CRISP).** Developed sequence-decision and latent-skill planning frameworks for long-horizon decision-making under partial observability; improved performance by ~8% on D4RL, Adroit, and RoboSuite benchmarks, with work accepted at (**IJCAI 2026**) and submitted to **IROS 2026**.
- Developed **attention-based reinforcement learning** methods for long-horizon sequential optimization in a NASA-funded autonomy project; reduced transfer time by 10% versus strong baselines (**IEEE Transactions**).
- Evaluated RL, imitation learning, and generative policy methods across simulation benchmarks, analyzing robustness, distribution shift, and policy adaptation.
- Designed an AI-driven control and anomaly-detection framework for cyber-physical systems, improving attack detection and system recovery in MATLAB/Simulink and PyTorch simulations (DOE-funded).

### Neuroprosthetics Group, Istanbul Medipol University ([link](#))

Graduate Research Assistant

Oct 2018–Dec 2020

Istanbul, Turkey

- Engineered a neural-signal-driven robotic control system using motor-cortex activity, integrating real-time sensing, control, and embodied interaction; supported by Turkish National Science Foundation (TUBITAK).

### Kansas State University ([link](#))

Graduate Teaching Assistant

Aug 2021 – May 2023

Manhattan, USA

- Supported instruction for undergraduate and graduate courses in AI and programming through labs, assignments, and technical mentoring.

### TetraPak ([link](#))

Automation and Control Engineer

Apr 2016–June 2018

Pakistan

- Delivered field support for industrial automation systems involving sensors, instrumentation, & control hardware.

### Tera Generation Solutions ([link](#))

Systems Integrator

Apr 2015–Mar 2016

Pakistan

- Deployed smart automation systems with integrated control hardware for residential and commercial buildings.

## SELECTED PUBLICATIONS

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1. Zaidi, S. M. Talha, *et al.* "GRALP: Generative Representation for Action Refinement and Latent Planning in offline Reinforcement Learning." Proceedings of the International Joint Conference on Artificial Intelligence (IJCAI), 2026.
2. Zaidi, S. M. Talha, *et al.* "CRISP: Context-Robust Inpainting for Long-Horizon Skill Planning under Partial Observability in Offline Reinforcement Learning" Submitted to IROS 2026. Enables robust long-horizon planning under missing context via masked latent skill inference.
3. Zaidi, S. M. Talha, *et al.* "Single-Agent Attention Actor-Critic: A Deep Reinforcement Learning-Based Solution for Low-Thrust Spacecraft Trajectory Optimization." *IEEE Transactions on Aerospace and Electronic Systems* (2025).
4. Khan, Muhammad Haris, Talha Zaidi, Salman Khan, and Fahad Shahbaz Khan. "Mode-Guided Feature Augmentation for Domain Generalization." In *BMVC*, p. 176. 2021.
4. Zaidi Ahsan, Lior Shamir, William Hsu, Talha Zaidi, "GRAZE: Grounded Refinement and Motion-Aware Zero-Shot Event" Accepted at *CVSports @ IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR)*, 2026.
6. Zaidi, S. M. Talha, *et al.* "Cascaded deep reinforcement learning-based multi-revolution low-thrust spacecraft orbit-transfer." *IEEE Access* **11** (2023): 82894–82911.
7. Zaidi, Talha, *et al.* "Automated Trajectory Planning: A Cascaded Deep Reinforcement Learning Approach for Low-Thrust Spacecraft Orbit-Raising." *IEEE Aerospace and Electronic Systems Magazine* (2025).
8. Talha Zaidi, *et al.* "Resilient Neural Control for Grid-Forming Microgrids: An Integrated AI Approach for Virtual-Impedance Scheduling and Cyber Attack Mitigation." *IEEE Applied Power Electronics Conference and Exposition (APEC) 2026*.
9. Hayat Ullah, Talha Zaidi, *et al.* "Improving Adversarial Robustness Through Adaptive Learning-Driven Multi-Teacher Knowledge Distillation." Submitted to *Springer Nature* (2025).
10. Zaidi, Talha, *et al.* "Learned vs. hand-crafted features for deep learning based aperiodic laboratory earthquake time-prediction." *2020 28th Signal Processing and Communications Applications Conference (SIU)*. IEEE, 2020.

## LEADERSHIP AND PROFESSIONAL ENGAGEMENTS

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### Selected Research Training & Professional Development

- Selected participant, IEEE Summer School on Telerobotics and Cyborg Technologies, Rochester Institute of Technology (RIT), 2026.

### Invited Peer Reviewer

- IEEE Transactions on Cloud Computing (2024–Present)
- IEEE Transactions on Aerospace and Electronics Systems (2025–Present)
- IEEE Access (2023–Present)
- IEEE Journal of Selected Topics in Applied Earth Observations & Remote Sensing (2023–Present)
- Wiley Engineering Reports (2023–Present)

### University Service

President, Graduate Students Association, Dept. of Computer Science, Kansas State University (2023–2024)

- Organized seminar series, featuring speakers from industry & academia to enhance students professional skills
- Led a team of student volunteers to facilitate cross-cultural exchange and dialogue.
- Liaised with the graduate students' office to coordinate and enhance event facilitation

President, Mechatronics Club Society, University of Engineering & Technology, Lahore (2013–2014)

- Initiated and directed "ROBOCOM," an inter-university robotics competition for undergraduate students.
- Secured corporate and university sponsorships to fund all competition logistics and prizes.

## AWARDS

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- Kansas State University, Graduate student of the Month Award- March 2026.
- Best Paper Presentation Award at IEEE Applied Power Electronics Conference and Exposition (APEC) 2026.
- Funded Ph.D. Scholarship & Research Assistantship, Kansas State University, 2021-Present .
- Funded Master's Scholarship & Research Assistantship, Istanbul Medipol University, 2018-2020.