Talha Zaidi

+1-785-473-0336 | tzaidi@ksu.edu | Linkedin/tzaidi13 | talhazaidi13.github.io | Google Scholar | GitHub/talhazaidi13

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 refinments**.
- 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 *Summer 2026*
PhD Candidate in Computer Science | GPA: 3.9/4.00 Manhattan, KS, USA
Advisor: Dr. Arslan Munir (link)
Research Focus: Reinforcement Learning, Generative AI, Foundation Models, and Machine Learning.

Istanbul Medipol University *Dec 2020*
M.S. in Biomedical Engineering | GPA: 3.7/4.00 Istanbul, Turkey
Research Focus: Artificial Intelligence, Brain–Machine Interface (BMI)

University of Engineering and Technology, Lahore *Aug 2014*
B.S. in Mechatronics and Control Engineering | GPA: 3.3/4 Lahore, Pakistan
Research Focus: Machine Vision (Image Processing), Robotics

Professional Experience

ISCAAS Lab, Kansas State University [link] *Aug 2021–Present*
Graduate Research Assistant 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] *Oct 2018–Dec 2020*
Graduate Research Assistant 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] *Aug 2021 – May 2023*
Graduate Teaching Assistant Manhattan, USA

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

TetraPak [link] *Apr 2016–June 2018*
Automation and Control Engineer Pakistan

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

Tera Generation Solutions [link] *Apr 2015–Mar 2016*
Systems Integrator Pakistan

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

Selected Publications

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, Syed, Lior Shamir, William Hsu, Scott Dietrich, and Talha Zaidi. "GRAZE: Grounded Refinement and Motion-Aware Zero-Shot Event Localization." In Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition (**CVPR**), pp. 10087-10095. 2026.
4. 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).
5. Khan, Muhammad Haris, Talha Zaidi, Salman Khan, and Fahad Shahbaz Khan. "Mode-Guided Feature Augmentation for Domain Generalization." In ***BMVC***, p. 176. 2021.
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

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

- 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.