LINJI (JOEY) WANG

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SUMMARY

Ph.D. researcher with a Mechanical Engineering to Computer Science trajectory, pioneering **curriculum learning for robotic RL and sim-to-real transfer**. **Vision:** Robots should learn progressively like humans—simple to complex without hand-tuning. My frameworks enable robots to "learn how to learn," achieving **50% faster convergence** and **24.6% higher real-world success rates**. Track record: 4 papers at IROS/RA-L with UT Austin & Sony AI. Industry experience at AWS deploying ML systems at **10,000+ req/s scale**.

EDUCATION

George Mason University	Fairfax, VA
Ph.D. in Computer Science, Advisor: Dr. Xuesu Xiao (RobotiXX Lab)	*Sep 2023 – May 2027 (Expected)*
Carnegie Mellon University	Pittsburgh, PA
M.Sc. in Mechanical Engineering, GPA: 3.94/4.0	*Sep 2021 – May 2023*
University of Cincinnati	Cincinnati, OH
B.Sc. in Mechanical Engineering, GPA: 3.75/4.0	*Sep 2017 – May 2021*

RESEARCH EXPERIENCE

RobotiXX Lab, GMU — Fairfax, VA
Graduate Researcher – Curriculum Learning for Robotics (Advisor: Dr. Xuesu Xiao) — *Aug 2023 – Present*

- Faced with RL policies that achieved 95% in simulation but only 30% on hardware, created the **Grounded Adaptive Curriculum Learning (GACL)** framework with teacher–student design.
- Developed humanoid learning pipeline leveraging 10,000+ motion sequences (locomotion, manipulation), scaling to 50M+ samples in 16,384 IsaacGym environments.
- Achieved **90% sim-to-real transfer**, 24.6% higher success, and 50% faster learning compared to state of the art.
- Collaborated with Peter Stone (UT Austin) and Sony AI on adaptive curriculum generation (IROS 2025).

Computational Engineering & Robotics Lab (CERLAB), CMU — Pittsburgh, PA
Research Assistant – 3D Perception for AR-Guided Robotics (Advisor: Dr. Kenji Shimada) — *Jan 2022 – May 2023*

- Designed AR-guided inpainting pipeline for occluded environments (**92% accuracy**); accelerated segmentation with RANSAC+DBSCAN (40% faster).

BioRobotics Lab, CMU — Pittsburgh, PA
Research Assistant – Industrial Vision Systems (Advisor: Prof. Howie Choset) — *Sep 2021 – Dec 2021*

- Deployed CNN-based quality control: **97% accuracy, 30 FPS**, processing 1M+ sheets/month; system now serves as testbed for **continual learning research**.

INDUSTRY EXPERIENCE

Amazon Web Services (AWS) — Bellevue, WA
Software Development Engineer Intern – ML Infrastructure, RDS Proxy Team — *May 2024 – Aug 2024*

- Identified 8-hour regression analysis bottlenecks blocking 20% of deployments; built **IPEBench platform** with Bayesian optimization and Thompson Sampling.
- Reduced analysis to 15 minutes (32× faster), improved reliability from 47% → 90%, and scaled to **10,000+ req/s in production**.
- Enabled **statistically rigorous A/B testing** at scale; system now used as benchmark for evaluating ML-based performance regression models.

PUBLICATIONS

[1] **L. Wang**, Z. Xu, P. Stone, X. Xiao. "GACL: Grounded Adaptive Curriculum Learning." *Proc. IEEE/RSJ Int. Conf. Intelligent Robots and Systems (IROS)*, 2025.

[2] **L. Wang**, T. Xu, Y. Lu, X. Xiao. "Reward Training Wheels: Adaptive Auxiliary Rewards for RL." *IROS*, 2025.

[3] Y. Lu, T. Xu, **L. Wang**, N. Hawes, X. Xiao. "Decremental Dynamics Planning for Robot Navigation." *IROS*, 2025.

[4] C. Zhao, Y. Li, Y. Jian, **L. Wang**, et al. "II-NVM: Enhanced SLAM with Normal Vector-Assisted Mapping." *IEEE Robotics and Automation Letters (RA-L)*, 2025.

TECHNICAL SKILLS

Deep Learning:	PyTorch (primary), JAX, TensorFlow; Transformers, Diffusion Policies; CUDA
RL & Sim2Real:	Curriculum Learning (expert), PPO, SAC, Imitation Learning, Domain Randomization
Robotics & Simulation:	IsaacLab, IsaacSim, IsaacGym, MuJoCo, ROS/ROS2; RLBench
Platforms:	Unitree G1 (humanoid), Unitree Go1 (quadruped), Clearpath Jackal (UGV), Off-road Autonomous Vehicle
Infrastructure:	AWS (EC2, S3, Lambda), Docker, Kubernetes, Multi-GPU Training, Git