LINJI WANG
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EDUCATION

George Mason University — Fairfax, VA
PhD in Computer Science, Specialization in AI and Robotics — *Sep 2023 – May 2027 (Expected)*

- Research Focus: Generative AI and Reinforcement Learning for Robotic Systems
- Relevant Coursework: Advanced Machine Learning, Deep Learning, Reinforcement Learning, Computer Vision

Carnegie Mellon University — Pittsburgh, PA
MSc in Mechanical Engineering — *Sep 2021 – May 2023*

- GPA: 3.94/4.0 (98.5%)
- Relevant Coursework: Machine Learning, Deep Learning, Computer Vision, Deep Reinforcement Learning & Control

PROFESSIONAL EXPERIENCE

Amazon Web Services (AWS) — Bellevue, WA
Software Development Engineer Intern - RDS Proxy Team — *May 2025 – Aug 2025*

- Developed IPEBench Data Visualization Platform with Streamlit, creating 8 interactive visualization types that reduced engineers' performance regression analysis time from 8 hours to 15 minutes
- Built production-grade Regression Testing Framework (10,000+ lines) with statistical analysis (Welch's t-test, power analysis, Bonferroni correction) achieving 99% confidence in detecting performance regressions
- Implemented adaptive sampling system using Thompson Sampling and Bayesian optimization for convergence detection, improving test reliability from 47% to 90% and eliminating false positives that previously blocked deployments
- Integrated AWS CloudWatch metrics with automated dashboard generation, enabling real-time performance monitoring and data-driven decision making for RDS proxy deployments across multiple regions

RESEARCH EXPERIENCE

RobotiXX Lab, George Mason University — Fairfax, VA
Research Project: Grounded Curriculum Learning for Efficient Reinforcement Learning in Robotics — *Aug 2023 – Present*

- Developed Grounded Curriculum Learning (GCL), a novel framework integrating real-world data with adaptive simulated task generation for robotic RL
- Implemented and optimized parallel RL algorithms (PPO, SAC) in IsaacGym, achieving 24.58% higher success rate and 50% improved sample efficiency
- Designed a fully-informed teacher agent for task generation and curriculum adaptation, demonstrating superior generalization to unseen environments
- Conducted large-scale experiments using the BARN dataset for challenging constrained navigation tasks
- Paper submitted to IEEE International Conference on Robotics and Automation (ICRA) 2024

Computational Engineering and Robotics Lab, CMU — Pittsburgh, PA
Research Assistant: 3D AR Scene Inpainting via Deep Learning — *Jan 2022 – May 2023*

- Developed an end-to-end deep learning pipeline for 3D AR scene inpainting, achieving 92% accuracy in scene completion
- Implemented and fine-tuned a GAN model for image inpainting, improving texture realism by 35% over baseline methods
- Applied RANSAC and DBSCAN algorithms for efficient 3D point cloud segmentation, reducing processing time by 40%

Bio-robotics Lab, CMU — Pittsburgh, PA
Research Assistant: Recycled Paper Classification — *Sep 2021 – Dec 2021*

- Designed and trained a CNN model using PyTorch for recycled paper-grade classification, achieving 97% accuracy on a dataset of 10,000+ images
- Implemented data augmentation techniques to improve model generalization and robustness
- Developed real-time image processing pipeline using OpenCV, handling 30 frames per second

RELEVANT PROJECTS

Flexible Long-Term Mortality Prediction — Deep Learning
Lead Developer — *May 2023 – July 2023*

- Developed a survival analysis model integrating CNN (MobileNet v2) with a Cox Proportional Hazards model
- Implemented attention mechanisms to focus on critical areas in radiography images
- Achieved 15% improvement in prediction accuracy compared to traditional statistical methods

TEACHING EXPERIENCE

Teaching Assistant, Introduction to Programming — Fall 2023, GMU
Teaching Assistant, Artificial Intelligence and Machine Learning — Fall 2022, CMU
Teaching Assistant, System Dynamics, Fluid Dynamics and Engineering Models — Fall 2020, UC

TECHNICAL SKILLS

Programming Languages:	Python (Advanced), C++ (Intermediate), SQL, Bash, CUDA
ML/DL Frameworks:	PyTorch, TensorFlow, JAX, Streamlit, Plotly, OpenAI Gym
AWS & Cloud:	RDS, CloudWatch, EC2, Lambda, S3, Docker, Kubernetes
Robotics & Simulation:	ROS, IsaacGym, MuJoCo
Statistical Analysis:	Hypothesis Testing, Power Analysis, A/B Testing, Regression Analysis
Tools & Libraries:	NumPy, Pandas, Matplotlib, OpenCV, Git, CI/CD

PUBLICATIONS

Wang, L., et al. "Grounded Curriculum Learning for Robotics" Submitted to ICRA 2024