JIANUO QIU

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EDUCATION

Georgia Institute of Technology Aug 2025 - May 2027 (Expected)
M.Sc in Robotics *Atlanta, GA*
Overall GPA: 4.00/4.00

Southern University of Science and Technology Aug 2021 - Jun 2025
B.Eng in Robotics Engineering *Shenzhen, China*
Weighted Average: 89.5/100.0 | Overall GPA: 3.69/4.00 | Major GPA: 3.84/4.00

PUBLICATIONS

- Han, Y.*, **J. Qiu***, L. Bai, Z. Xiao, Z. Zeng, Y. Liu, Z. Yang, S. Jain, W. Ma, J. Fu, Y. Zheng, M. Natarajan, M. Z. Irshad, K. Shaw, M. Gombolay, Z. Kira, and H. Ravichandar, "Video2Sim2Real: Full-Stack Autonomous Dexterous Skill Acquisition from a Single Human Video," *arXiv:2606.08828*, 2026.
  Spotlight (Oral) & Poster — Dex-CoRL Workshop (CoRL 2026).
- Zhang, R.*, W. Qiu*, **J. Qiu**, Y. Guo, C. Dong, T. Zhang, J. Yi, C. Song, H. Asada, and F. Wan, "Multi-Modal Intention Recognition Combining Head Motion and Throat Vibration for Underwater Superlimbs," *IEEE Transactions on Automation Science and Engineering*, 2025.
- Chen, Y.*, Zhang, C.*, P. Gu*, **J. Qiu**, J. Yin, N. Qiu, G. Huang, B. Huang, Z. Zhang, H. Deng, W. Zhang, F. Wan, and C. Song, "Evolutionary Morphology Towards Overconstrained Locomotion via Large-Scale, Multi-Terrain Deep Reinforcement Learning," in *Proceedings of the 6th IEEE International Conference on Reconfigurable Mechanisms and Robots (ReMAR)*, 2024, pp. 401–408.

RESEARCH EXPERIENCE

Video2Sim2Real Dec 2025 - Jun 2026
Co-first Author | STAR Lab, Georgia Tech *Atlanta, GA*

· Designed and implemented the full object-centric keyframe refinement pipeline, optimizing task-specific grasping, pushing, and pulling configurations from reconstructed geometry; achieved 91.4% average simulated task success and 100% safety across seven tasks.
· Developed robust object-pose recovery at interaction keyframes using RANSAC-wrapped Kabsch/SVD rigid SE(3) registration on tracked 3D correspondences, enabling object-relative hand poses to preserve the demonstrated task intent.
· Built phase-aware trajectory generation and interpolation using exact IK anchors, damped-least-squares task-space correction, quintic smoothstep blending, and trajectory smoothing, preserving refined keyframe constraints while producing smooth, executable robot motions.
· Designed and trained point-cloud keyframe-pose distillation policies that map noisy partial object observations to calibrated robot hand poses, enabling deployment-time geometry adaptation and robust manipulation under ± 5 cm object-position variations along both planar axes.
· Trained DP3 imitation-learning policies and developed a FoundationPose-based baseline pipeline for sim-to-real dexterous manipulation, enabling controlled comparisons against the proposed decoupled IL + residual RL framework.

- Led all real-world experiments and policy ablations on a Kinova Gen3 arm with a LEAP Hand; achieved 95.7% success (67/70 trials) across seven dexterous manipulation tasks under ±5 cm object-position variations along both planar axes.

Spherical Linkage as Limbs in Flapping-Wing Robots Jun 2024 - Jun 2025
Undergraduate Researcher | BionicDL Lab, SUSTech *Shenzhen, China*

- Designed robot wings in Fusion 360 with three kinds of configurations: planar, spherical, and Bennett 4-bar linkages, and fabricated wing prototypes with several sets of design parameters for each configuration.
- Conducted aerodynamics simulation experiments with static wings in ANSYS Fluent to estimate lift force and drag force, and evaluated performance across different wing configurations under different wind velocities.
- Designed and built a custom flapping-wing experimental platform with a 6-axis force/torque sensor, including CAD design of mechanical components in Fusion 360, 3D printing, system assembly, and experimental lift-force data collection.
- Developed and trained neural network models for different wing configurations taking design parameters and flapping frequency as input and lift force maximum as output to estimate optimal design parameters, and validated the effectiveness of a hierarchical training strategy combining pretraining and fine-tuning for neural networks.

Overconstrained 4-bar Linkages as Robot Limbs in Locomotion Nov 2023 - Apr 2024
Second Author | BionicDL Lab, SUSTech *Shenzhen, China*

- Trained wheel-legged overconstrained locomotion models using deep reinforcement learning in Isaac Gym across diverse terrains, including discrete flat surfaces, rough slopes, uphill, and downhill environments; fine-tuned reward parameters to optimize locomotion performance.
- Extracted torque, velocity, and displacement data from Isaac Gym and computed Cost of Transport (CoT) metrics for forward and lateral locomotion, quantifying 22.4% and 30.6% lower energy consumption for overconstrained limbs than planar limbs, respectively.

Multi-modal Intention Recognition for Underwater Superlimb Aug 2023 - Sep 2024
Second Author | BionicDL Lab, SUSTech *Shenzhen, China*

- Conducted underwater intention-recognition and wearable interaction experiments, and collected multimodal datasets for training and testing.
- Developed a MATLAB-based GUI for both forward and inverse force analysis of two thrusters, supporting 3 kinds of input methods including joystick control, mouse interaction, and superlimb input.
- Extracted force data from the superlimb, and visualized real-time data within the MATLAB GUI.

HONORS & AWARDS

Outstanding Student Scholarship, SUSTech 2024
First Prize, 15th International Robot & Simulation Technology Competition 2022

TECHNICAL SKILLS

Programming Languages Python, MATLAB, C++, C#, Java, LaTeX
Frameworks & Simulation PyTorch, Isaac Lab, Isaac Gym, ROS/ROS2, MuJoCo, OpenCV
Hardware Kinova Gen3, LEAP Hand
CAD & Engineering Tools SolidWorks, AutoCAD, Fusion 360, ANSYS Fluent