

# SHELDON SHIQIAN LIANG

+1-734-450-1084 | sheldonl@andrew.cmu.edu | www.linkedin.com/in/shelsql/ | shelsql.github.io

## EDUCATION

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**Carnegie Mellon University** **Pittsburgh, PA**  
Master of Science in Computer Vision Dec 2025  
*Current Relevant Courses:* Advanced Computer Vision, Introduction to Machine Learning, Computer Graphics

**Peking University** **Beijing, China**  
Bachelor of Science in Computer Science and Technology | GPA: 3.74/4.0 Jul 2024  
*Completed Relevant Courses:* Computer Vision, Introduction to Generative Modeling, Introduction to AI, Data Structure and Algorithms, Practice of Programming in C&C++

## SKILLS

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**Programming Languages:** C/C++, Python, HTML/CSS, SQL  
**Tools&Frameworks:** Blender, PyBullet, PyTorch, OpenCV, LATEX, Git, Linux, Bash  
**Languages:** English(native), Chinese(native)

## RESEARCH EXPERIENCE

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**Peking University Hyperplane Lab** **Beijing, China**  
*Research Assistant* Jan 2024 - Aug 2024

- Developed a synthetic data generation pipeline using **PyBullet** and **Blender** and generated a dataset with precise depth, mask, and part pose annotations with realistic robot arm movement sequences.
- Implemented a CAD model-based end-effector 6D pose tracking method with DINOv2 feature matching and multi-frame optimization in **Python** and **C++**.
- Achieved 19% higher average distance accuracy on a 1cm error threshold than previous SOTA methods.

**Stanford University Geometric Computation Group** **Palo Alto, CA**  
*Student Intern* Jul 2023 - Jan 2024

- Devised a novel pixel tracking method leveraging a conditional diffusion model conditioned on local feature similarity scores for denoising pixel trajectories.
- Achieved 47% position accuracy on Tapvid-DAVIS dataset.
- Organized over 15 tracking datasets for experiments for paper *TAG: Tracking at Any Granularity*.

**Peking University Hyperplane Lab** **Beijing, China**  
*Research Assistant* Jul 2022 - Nov 2022

- Constructed a synthetic data rendering framework using **Blender** with domain randomization, and produced a dataset with over 100,000 images with detailed pose and keypoint annotations.
- Devised a novel category-level gripper pose estimation model with key-point supervision and shape deformation to generalize across various gripper shapes.
- Improved mean average precision by 15% on a 5°2cm error threshold compared to previous SOTA methods.

## ACADEMIC PROJECTS

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**Dynamic Neural Radiance Fields with Depth Supervision** **Beijing, China**  
Peking University, Algorithm Design and Analysis Apr 2022 - Jun 2022

- Built a Neural Radiance Field with time dimension to reconstruct dynamic scenes from a monocular video.
- Integrated sparse depth supervision, resulting in better reconstructed scene geometry.

**Image Style Transfer with Adaptive Instance Normalization** **Beijing, China**  
Peking University, Introduction to AI Apr 2021 - Jun 2021

- Developed a style transfer algorithm based on Adaptive Instance Normalization incorporating HED edge detection and edge supervision, producing stylized images with more faithful details.