

# Amy Lin

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## EDUCATION

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**Carnegie Mellon University**  
B.S. in Computer Science (GPA: 3.52)

Pittsburgh, PA  
Aug 2020 - May 2024

**Relevant Coursework:** Great Ideas in Theoretical Computer Science, Algorithm Design & Analysis, Probability & Computing, Distributed Systems, Artificial Intelligence Representation & Problem Solving, Intro to Machine Learning, Computer Vision, Computer Graphics, Machine Learning with Large Datasets, Intermediate Deep Learning, Software Foundations of Privacy & Security, Database Systems, Generative Artificial Intelligence

## WORK EXPERIENCE

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**Aurora Innovation: Software Engineering Intern** May 2023 - Aug 2023

- Scraped Postgres database using SQL and wrote various data processing scripts to target meaningful training data
- Added distributed metric computation to data sourcing and prioritization pipeline
- Collaborated with various teams to have data labeled and cleaned, wrote Python/C++ scripts to evaluate new data
- Trained and evaluated a perception model with new data using AWS Sagemaker, analyzed performance based on metrics

**Google: Software Engineering Intern** May 2022 - Aug 2022

- Designed and wrote gRPCs for fetching integration test data between various CI/CD sources
- Completed and tested Java backend implementation for several highly user-requested features

**Google: STEP Intern** May 2021 - Aug 2021

- Implemented sorting features for Google Kubernetes Engine, managing over 50,000+ entities per project
- Wrote design docs, iterated on reviewed code, and wrote backend unit tests for Java web application

## RESEARCH EXPERIENCE

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**Computer Vision Research Assistant** Feb 2022 - Present

- Wrote distributed training, evaluation, and visualization pipelines for many datasets and ML models using PyTorch
- Experimented with MLPs, transformers, and diffusion models to outperform existing baselines in sparse view pose estimation
- Created web pages, HTML visualizations, videos, and presentations for supplementary materials and paper release

**MoonRanger: Perception Programmer** Aug 2021 - Jan 2022

- Developed two Core Flight System applications in C/C++ for CMU's [lunar rover](#) team
- Implemented stereo rectification algorithm for rover perception

**Virtual Reality Research Assistant** Feb 2021 - May 2021

- Developed Oculus Quest 2 experience with physical challenges for two different environments, automatically storing results to FTP server
- Analyzed user responses to quantifiably understand how a person's physical perception is affected by virtual reality

## EXTRACURRICULARS

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**Teaching Assistant**

- Lead recitations, hold office hours, and grade assignments for the graduate course Deep Reinforcement Learning & Control

**Game Creation Society: Project Lead**

- Led 15+ interdisciplinary students to create a deathmatch style first person shooter in Unity for WebGL (see [Project Page](#))
- Implemented multiplayer networking using AWS, AI actors, character movement and more

## PUBLICATIONS

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Amy Lin\*, Jason Y. Zhang\*, Deva Ramanan, and Shubham Tulsiani. RelPose++: Recovering 6D poses from sparse-view observations. arXiv preprint [arXiv:2305.04926](https://arxiv.org/abs/2305.04926), 2023. ( 3DV 2024 Oral, [Project Page](#))

Jason Y. Zhang\*, Amy Lin\*, Moneish Kumar, Tzu-Hsuan Yang, Deva Ramanan, Shubham Tulsiani. Cameras as Rays: Sparse-view Pose Estimation via Ray Diffusion. ( ICLR 2024, Oral)

## SKILLS

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**Programming Languages**  
Web/iOS Development  
AR/VR/Game Development

Python, C/C++, Java  
HTML, JS, CSS, Swift, Obj-C  
Unity, Unreal Engine, Blender

**Competitive Programming**  
Other

USACO Gold Division  
AWS, Kubernetes, Bazel, Linux, ROS