Amy Lin

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EDUCATION

Carnegie Mellon University   **Pittsburgh, PA**
B.S. in Computer Science (GPA: 3.45)   **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
Teaching Assistant for Deep Reinforcement Learning & Control

EXPERIENCE

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
- 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, analyzed performance based on metrics and scenarios
- Added distributed metric computation to data sourcing and prioritization pipeline

Physical Perception Lab: Computer Vision Research Assistant   **Feb 2022 - Present**
- Trained neural shape network to reconstruct 3D cars and explore categorical latent space
- Experimented with MLPs, transformers, and diffusion models to outperform existing baselines in sparse view pose estimation
- Wrote distributed training, evaluation, and visualization pipelines for many datasets and baseline models
- Created videos, web pages and HTML visualizations for supplementary materials and paper release

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

PROJECTS

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

Augmented Perception Lab: VR Physics Simulator
- Unity Oculus Quest 2 application to measure how a person's understanding of physics varies across environments

MoonRanger: Perception Programmer
- Developed two Core Flight System applications in C/C++, implementing stereo rectification algorithm

iOS Applications
- Camera utility that allows users to determine which items in a photo are recyclable, made with Swift, Google Cloud Vision API
- A conversation-oriented language translator made with Swift, Objective-C, Google Speech APIs

SKILLS

Programming Languages	Python, C/C++, Java	**Competitive Programming**	USACO Gold Division
Web/iOS Development	HTML, JS, CSS, Swift, Obj-C	**Other**	AWS, Kubernetes, Bazel, Linux, ROS
AR/VR/Game Development	Unity, Unreal Engine, Blender		

PUBLICATIONS

Amy Lin*, Jason Y. Zhang*, Deva Ramanan, and Shubham Tulsiani. RelPose++: Recovering 6D poses from sparse-view observations. arXiv preprint arXiv:2305.04926, 2023. (Accepted to 3DV 2024, 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. (Submitted to ICLR 2024)