Lillian Hong

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Education

Cornell University
College of Engineering
B.S. Computer Science
Expected May 2022

GPA: 3.8/4.0 | Engineering Dean's List
2020-2021 SRC Undergraduate Research Scholar
Coursework Highlights († = TA) (* = currently enrolled) : Machine Learning†, Functional Programming†, Interactive Graphics, Distributed Computing Principles, Game Design, Computer Graphics & Practicum, Operating Systems, Intro., C++ Programming, Analysis of Algorithms, Structure of Info Networks*

Skills

Python, Java, C++, C#, Typescript, OCaml, Unity, Oculus, Magic Leap, Vulkan, PyTorch, Docker, OpenCV, Git

Work Experience

Facebook Software Engineering Intern - Facebook Reality Labs, Horizon — Summer 2021
- **Initiated hand tracking input system for Horizon, a virtual reality multiplayer game for Oculus Quest**
- Created gesture detection system for classifying thumbs up, high-five, grab, and fist bump for player emotes
- Implemented a hands-only locomotion system with teleportation and snap turning capability

Amazon Software Development Intern - Amazon Photos Computer Vision — Summer 2020
- **Developed end-to-end workflow for training and evaluation of face clustering classification models**
- Reduced frequency of costly reclustering training operations by 60-70%
- Fully automated classifier evaluation on custom data set partitions, integrated w/ CLI tools deployed to PROD

Undergraduate Researcher - Cornell Tech XR Collaboratory — Fall 2020 - Spring 2021
- **Developed app for real-time capture of BRDF and dynamic texturing of spatially mapped objects on Magic Leap 1**
- Simulated the capture of light fields for reprojected viewing in AR with Unity.

Projects

Tempus - Game Design Initiative at Cornell **| Team Lead |** play tempus! — Spring 2020
- **Awarded 'Most Polished' game for the 2019-2020 GDIAC Digital Showcase.**
- Led a team of 8 programmers/designers to create a puzzle action platformer in one semester.
- Designed and developed a custom game engine using LibGDX and ripple shaders in OpenGL/GLSL

CUAir - Intelligent Systems **| Subteam Lead |** cuair.org — Fall 2018 to Present
- **Led a team of 8 engineers developing pipelines for detection of multi-class ground targets and UAV path planning.**
- Designed pipelines for UAV flight paths and the procedural generation of test case obstacles and waypoints.
- Generated synthetic training data for target classification in Unity Perception.

Real-time Renderer **| OpenGL |** github — Spring 2021
- **Developed real-time rendering system, which supports both ray tracing and rasterization**
- Implemented the deferred rendering pipeline, including bloom and toon shading, from scratch.

Multi-Paxos Sharded Key-Value Store **| Distributed Systems** — Fall 2020
- **Implemented the Paxos consensus algorithm to store data across a distributed server cluster**
- Created system for dynamic load balancing by sharding the key value store across multiple Paxos server clusters

Lockdown Letters **| Co-Founder |** lockdownletters.org — 2020
- **Delivered 7000+ letters of appreciation to frontline workers in 84 institutions in 34 states.**
- Interviewed and featured in WGBH Boston, The Daily Pennsylvanian, and Watertown Daily Times

Wandering Islands **| Unity/Oculus |** github — Summer 2020
- **Experimental VR experience of floating through a world of procedurally generated floating islands, made for Oculus Quest**
- Implemented procedural generation of terrain and island meshes using perlin noise and poisson-disc sampling.