

# Luyuan Wang

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## EDUCATION

### Carnegie Mellon University

Master of Science in Electrical and Computer Engineering; GPA: 3.95/4.0

**Coursework:** Computer Systems, 3D Vision, Deep Learning, SLAM, Distributed Systems

Pittsburgh, PA

May 2023

### Huazhong University of Science and Technology

Bachelor of Engineering in Telecommunications Engineering; GPA: 3.6/4.0

**Coursework:** Computer Organization, Computer Networks, Embedded Systems, Intelligent Robots

Wuhan, China

June 2019

## SKILLS

**Programming Languages:** Python, Swift, C, Objective-C, JavaScript, Java

**Frameworks:** Cocoa Touch, PyTorch, React, Django, ROS, Flutter

## EXPERIENCE

### Apple Inc.

Software Engineering Intern

Cupertino, CA

May 2022 - Aug. 2022

- Automated UI template creation by parsing the Abstract Syntax Tree (AST) of Swift code for a server-driven UI framework that decodes native SwiftUI from JSON encodings. Achieved 85% code coverage of unit tests.

### ByteDance Inc.

Software Development Engineer

Beijing, China

July 2019 - Dec. 2020

- Developed the new year events module and a video player on Huoshan (Vigo.TikTok) iOS client for user growth requirements. Refactored multiple core modules to improve code maintainability.
- Implemented a dependency graph based popup window manager. Managed data flow with ReactiveCocoa.
- Designed a server-driven framework for operational activities. The framework's UI layer and logic layer execute JavaScript to reduce version publishing frequency.
- Analyzed user behavior with Machine Learning to send beta testing invitations precisely.
- Participated in constructing the CI/CD platform based on GitLab with Django, Node.js, React, and Electron. Improved teamwork efficiency.

### Tencent Inc.

Software Development Intern

Shenzhen, China

June 2018 - Aug. 2018

- Developed a multifunctional log viewer program. Implemented a submodule that fetches log files with silent push notifications and uploads them to Tencent Cloud.

## PROJECTS

### ARPA-E Natural Gas Pipeline Mapping Project

Research Assistant; Biorobotics Lab, Carnegie Mellon University

Pittsburgh, PA

Nov. 2021 - Present

- Developed new features for the Visual-Laser-Inertial SLAM system for confined space 3D reconstruction. Built a large-scale point cloud visualization system with ARKit.
- Proposed and implemented an image inpainting algorithm to reduce hardware complexity with Deep Learning based optical flow estimation.

### Image Classification using Wavelet Domain Inputs

Research Assistant; VIS Lab, Tsinghua University

Beijing, China

Dec. 2020 - Aug. 2021

- Proposed and researched a novel CNN architecture that takes wavelet domain inputs. Improved classification accuracy by 2.15% on Caltech-256 dataset.
- Published one [journal paper](#) in IET Image Processing and one China patent.

### Smart Infrastructure for Autonomous Driving

Research Assistant; VPC Lab, University of Missouri - Columbia

Columbia, MO

Jan. 2019 - May 2019

- Established a distributed 3D vision and controlling system with ROS. Calibrated multiple cameras and built a real-time remote car tracking pipeline with OpenCV.
- Proposed and realized a communication protocol that supports fast roaming among multiple base stations. Reduced the switching delay by configuring the network card to work at monitor mode and sniff IP packets.

## ACTIVITIES

### Bingyan Studio

iOS Team Leader; Huazhong University of Science and Technology

Wuhan, China

Sep. 2017 - June 2018

- Recruited, interviewed, and mentored new members. Launched 3 apps on App Store and obtained 20,000-plus downloads in one year.