

# Zhian Li

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## EDUCATION

University of Southern California, Los Angeles, CA

GPA: 3.95/4.0

### Viterbi School of Engineering

January 2022 – May 2023

*M.S. in Computer Science*

**Coursework:** Graduate Level Computer Animation and Simulation, Mobile Games Development, Advanced Game Project

### Viterbi School of Engineering

August 2018 – December 2022

*B.S. in Computer Science*

**Coursework:** Data Structures, Object-Oriented Design, Discrete Methods in Computer Science, Software Engineering, Algorithms, Artificial Intelligence, Machine Learning, Video Game Programming, Computer Graphics, Operating Systems

**Honors:** Dean's List, four years in a row (2018, 2019, 2020, 2021).

## WORK EXPERIENCE

### Backend developer (C++)

May 2021 — August 2021

Tencent Holdings Ltd, Shenzhen

- Worked in a large group (50+ people) with a strict development-testing-operation workflow, and modified the legacy backend billing server to support auto-renewable subscriptions for Tencent Cloud.
- Updated the Common Gateway Interface and Database Structure for new business requirements from Tencent's partners.
- Exercised scripting, memory management, and networking on the multicore environment of the Tencent Cloud server.

### Full-stack developer (React)

September 2021 — December 2021

[EthSign](#) (Remote)

- Worked with a start-up company in developing a blockchain contract-signing platform. Implemented an asymmetrical AES encryption method that securely encrypts the contract and binds the password to the user's wallet private key.
- Adjusted the front-end layout on the contract signing page for the new encryption method using react.
- Implemented the backend functions for automatic email notifications when the contract is created and signed.

### Backend developer (Golang)

June 2020 — August 2020

Tencent Holdings Ltd, Shenzhen

- Worked in a team of 17 people, developed the backend client of the Real-Time Bidding Advertising System in Tencent Game using Go-Gin. Benefiting from Go's concurrency pattern, the system can process up to 150,000 QPS (queries per second).
- Built visualized graphs to monitor the statistical data of the bidding advertisement service.
- Experienced cross-department collaboration between the game department and the advertisement department.

## ACADEMIC PROJECTS

### Encountered-Type Haptic Device (C++, HaRVI Lab Research)

Summer 2022 – Present

- Work as a research assistant at the Haptics Robotics and Virtual Interaction (HaRVI) Lab at USC under the direction of Prof. Heather Culbertson. Develop a new generation of a haptic system that can render both hard and soft objects stably.
- Utilize CAD tools and 3d printers to design and build the haptic device, which uses a rotating motor to dynamically change the hardness of the end-effector (the contact surface) to render materials of different stiffness.
- Build the VR interface for users with Chai3d (OpenGL) and calibrated the motor output using machine learning. The goal is to design user experiments, evaluate the result, and publish at IEEE Haptics Symposium or similar conferences.

### CNN for Image Colorization (Python, Keras, Machine Learning Class Project)

Spring 2021

- Created a convolutional neural network to convert greyscale bird images from CIFAR-10 to four-color images (color selected using k-means clustering from the training set). Trained for 30 Epoch and reached training accuracy 0.69, test accuracy 0.58.
- Network contains three convolutional layers and three dense layers. Also used SoftMax and pooling technique.
- Took the project beyond class level, expanded the neural network and colorized images using 8, 16, and 32 different colors.

## TECHNICAL SKILLS

- Programming Languages: C++ 11, Python, C#, Golang, Java, Javascript,
- Git, MySQL, Android, OpenGL, TensorFlow (Keras), Perforce, Unity, Unreal 5

## ACTIVITIES

A Proud and Energetic Trumpet Player of the USC Trojan Marching Band

August 2019 – August 2022