

# Ching-Chih Chen

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## Education

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### University of Southern California

Master of Science in Computer Science

Los Angeles, CA

Expected: May 2023

### National Central University

Bachelor of Science in Computer Science and Information Engineering

Taoyuan, Taiwan

Jan. 2020

## Work Experience

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### Industrial Technology Research Institute

Assistant Software Engineer

Hsinchu, Taiwan

Dec. 2020-Jul. 2021

- Designed image processing flows to discern and analyze organs volume on ultrasound images, using Python, OpenCV
- Conducted U-net CNN model to enhance discerning accuracy, using Python, Keras, TensorFlow
- Transplanted machine learning model and processing flows to Android to cooperate with portable ultrasound devices and calculate organs volume in real time, using Kotlin, Java

## Projects

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### Forward and Inverse Kinematics

Spring 2022

- Implemented forward and inverse kinematics using pseudo inverse and damped least square method
- Performed linear blending and dual quaternion skinning on character, using C++, OpenGL

### Angular AJAX website

Spring 2022

- Constructed responsive AJAX stock search website with Angular front-end, Node.js back-end, bootstrap for responsive and Highchart for presenting information, deployed on Google Cloud Platform

### Physically Based Simulation

Spring 2022

- Simulated jello cube bouncing with mass spring system, applied penalty based contact for collision, using C++, OpenGL

### Ray Tracer

Fall 2021

- Rendered scenes using backward ray tracing with recursive reflections and soft shadows, using C++, OpenGL

### Hyperlink video player

Fall 2021

- Built video editor to generate and output hyperlink to connect related information between videos, using C++
- Synchronized image files, sound files and hyperlink information to an interactive video

### JPEG Compression

Fall 2017

- Implemented JPEG encoding and decoding pipeline, with 32.31 PSNR value on quality factor 90 on compression of baboon raw image, using C++

## Research Experience

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### Indoor Localization

Advanced Computing And Networking Lab, National Central University

Taoyuan, Taiwan

Sep. 2017-Jul. 2018

- Researched and improved Weighted Centroid Localization to locate target devices with Bluetooth signals
- Constructed an Android application to connect with Bluetooth devices and predict user position in setup environment

## Publication

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Jehn-Ruey Jiang, Hanas Subakti, **Ching-Chih Chen**, Kazuya Sakai, "PINUS: Indoor Weighted Centroid Localization with Crowd-sourced Calibration," in International Conference on Parallel and Distributed Computing: Applications and Technologies, 2018

## Skills

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C/C++, Python, Java, Kotlin, Javascript, OpenGL, Unity, Android