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CartonLiu

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Carton22

#### **Education**

# B.Eng. with Honors in Artificial Intelligence (Turing Class)

Zhejiang University

Outstanding honored undergraduate in **Chu Kochen Honors College**(10%) GPA:3.81/4.0 Sep 2020 – now

Research interest AR/VR/HCI/HAI/LLM/Data Visualization/AI x XR Coursework Machine Learning/ Computer Vision/ Natural Language Process/ Data Visualization

Mixed Reality/Information and Interactive Design/Cognitive and Intelligent Design

#### Research Experience

# Harvard Visual Computing Group, Harvard University

Cambridge, USA

Research Intern with **Prof. Hanspeter Pfister** and **Prof. Zhutian Chen** 

Sep 2023 - present

- Develope a 3D immersive data analysis system enabling in-situ and ex-situ combined workflow
- WebXR platform oriented design, combining hand gesture interaction into the immersive analytics workflow
- Design new data analysis paradigm for analyzing and viewing 2D/3D, static/dynamic, tangible/virtual data

# Stanford HCI Group, Stanford University

California, USA

Research Intern with **Prof. James Landay** and **Ph.D Candidate Jackie Yang** 

Jul 2023 - Sep 2023

- SwiftGenieXR —— a declarative programming framework, exploring the power of LLM in XR workspace
- Implement a Swift-based framework facilitating LLM and voice/hand input interaction in Apple Vision Pro
- Harness SwiftMacro and SwiftData to tackle 3D scene understanding and persistent data storage problems

# **ZJU International Design Institute, Zhejiang Univeristy**

Hangzhou, China

Student Research Training Program advised by **Prof. Lingyun Sun** and **Prof. Zejian Li** Mar 2022 - Jun 2023

- Design non-parametric algorithms to improve the sampling efficiency in DDIM/DDPM diffusion models
- Implement the proposed algorithm in baseline diffusion models and deploy them on training
- Collect and organize experimental image dataset, analyze and visualize the experiment result

#### **Project**

# Handbot———Apple WWDC2023 Swift Student Challenge

Human-centered AI

[Github] [Youtube]

Apr 2023

- A swift playground aiming to encourage users to think critically, and recreate all the AIGC content.
- Concentrate the design paradigm on three information modals ——— text,image and audio.

# **Transcrisense———Immersive Game Watching App For The Hearing-impaired** [Github] [Youtube]

Accessibility Design
Jun 2023

- A multimodal-designed swift app for the hearing-impaired users to immerse in watching sports game.
- Utilize the haptic and visual information-color, shape, vibration to compensate for the listening channel

# Is raining threes worth it?——NBA 3-pointer Data Visualization Project

Data Visualization

[Website] [Youtube]

Dec 2022

- A front-end interactive visualization website displaying the NBA 3-pointers data, received 17000+ views
- Analyze the impact of the three-point shot on the game and the player from multiple perspectives.

#### **Cut\_Fruits\_3D——immersive Fruit Ninja VR Game**

Virtual Reality

[Github] [Youtube]

Jun 2023

An immersive 3D version Fruit Ninja VR Game, received 500+ views, developed by Unity3D

#### **Awards**

President of the Morningside Scholars Program in class 2023 Leading Scholarship & Second-prize Scholarship of Zhejiang University May 2023 - present Oct 2023,2022

#### Professional skills

Programming Tools Swift/Python/C/C++/C#/Unity3D/WebXR/HTML/CSS/Javascript/Pytorch/Bash LLM/Xcode/Swift Playground/Apple Vision Pro/Meta Quest/PICO/Pr/PS/Au/Figma