# Xinyi Zhou

(+86) 182-6717-3285 | zxinyi@zju.edu.cn | Github: ritzzzz2021 | Homepage

## Education

**Chu Kochen Honors College, Zhejiang University** — Zhejiang, China

*B.S. in Computer Science* — *GPA: 3.89/4.00 (top 5% out of 317)* — *Expected June 2024*

## Experience

**Undergraduate Research Assistant** — May 2023 – Present

*Advisor: Prof. Lingjie Liu* — *University of Pennsylvania*

- **Topic**: real-time generative textures for 3D-aware head avatars
- Synthesized head avatars by combining generative textures and 3D morphable model (3DMM)
- Accelerated 3D human synthesis with a fast differentiable rasterizer to achieve real-time head avatar generation
- Read paper covering various generative models, especially GANs and diffusion models for 3D reconstruction

**Undergraduate Research Assistant** — Feb. 2023 – Present

*Advisor: Prof. Weiwei Xu* — *State Key Lab of CAD&CG, Zhejiang University*

- **Topic**: synergizing radiance and occupancy fields for live human performance capture
- Reconstructed 3D human from multi-view RGBD images by applying TSDF fusion algorithm
- Involved in human performance dataset collection process and figured out how RGBD cameras work

**Artificial Intelligence Research Intern** — Sept. 2023 – Dec. 2023

*Advisor: Prof. Shengyu Zhang* — *Zhejiang Lab*

- **Topic**: sparse-view reconstruction for anime characters
- Improved appearance of generated avatars with a special viewpoint-aware cross-attention for feature aggregation
- Processed 3D assets scraped from an open source community, generating renderings to establish our dataset
- Involved in writing an 8-page paper and deployed the project page

## Projects

**IoT Thermo-Hygrometer** | *Python, C, ESP32, Raspberry Pi, MQTT* — May 2023 – June 2023

- Programmed ESP32 with MicroPython to read data from the humidity and temperature sensor, DHT11
- Uitilized ESP32's integrated Wi-Fi module to transmit data under MQTT protocol
- Displayed thermo-hygrometer data on a LED matrix by implementing a character device driver for Raspberry Pi

**Protein Similarity Retrieval** | *Python, PyTorch* — May 2023 – June 2023

- Modified the network structure based on the baseline CNN-ED, including adjustments to batch size, embedding size, and similarity distance calculation method
- Replaced the optimizer with RAdam, resulting in a 19% increase in accuracy on the test set
- Attempted to replace the network structure with different architectures, including RNN and Attention

**Simplified Linux Kernel** | *C, Assembly* — Oct. 2022 – Dec. 2022

- Implemented a simplified version of the Linux kernel in C, possessing basic operating system functionalities
- Implemented kernel entry, interrupts, process creation and priority scheduling, multithreading, virtual memory, and hierarchical page tables

**EasyX** | *Java, Android Studio* — July 2022 – July 2022

- Developed a fitness app compatible with smart eyewear, where users can interact with instructional videos through the sensors embedded in the eyewear, relieving users' hands for better experience
- Added voice control by integrating an open source speech recognition API
- Group work finished in 6-day NUS-HCI Summer Bootcamp of Future Interaction for Smart Glasses

**MyNote** | *C++, Qt, MySQL* — Apr. 2022 – June 2022

- Implemented a text editor for taking diary that supports quick search by date, tag or other attributes
- Designed graphical user interfaces (GUIs) using Qt to respond to user actions
- Accelerated data fetching by connecting to databases, storing meta data and executing queries

## Honors and Awards

**Zhejiang University First-class Scholarship** 2022
*granted by Zhejiang University*

**First Prize in Chinese Mathematics Competitions, Zhejiang Division** 2021
*granted by Zhejiang Mathematical Society*

## Technical Skills

- **Languages**: Python, C, C++, MySQL, Assembly, Shell, JavaScript, HTML, CSS, Java
- **Tools**: Git, Markdown, LaTex, VS Code, Visual Studio, MeshLab, Blender