Haofan Wang

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Personal Profile

I'm a senior undergraduate student majoring in artificial intelligence at *the School of Computer Science* and *Chu Kochen Honors College*, *Zhejiang University*. My research interest lies at the intersection between *3D Vision*, *Machine Learning*, and *Robotics*.

Education

Zhejiang University *Hangzhou, China*

B.Eng. with Honors in Artificial Intelligence (Turing Class) *September 2020 - present*

- Outstanding honored undergraduate in Chu Kochen Honors College (10%) GPA: 3.86/4
- Selected to Morningside Scholars Program in 2024 (0.6%)
- Fundamental Science Outstanding Talent Scholarship of Zhejiang University

Project Experience

ImTooth: Neural Implicit Tooth for Dental Augmented Reality *CAD&CG lab*

Zhejiang University *April 2022 - April 2023*

- "AR+ medicine", combine the modeling and localization ability of neural implicit fields into AR glasses to assist clinical surgery of oral medicine.
- Under the guidance of *Prof.Guofeng Zhang* and Ph.D. students, mainly responsible for 3D reconstruction using NeuS, a method developed from NeRF.
- Modifying NeuS by adding depth information to accelerate the reconstruction and adding edge information to improve the quality.

Pointloc: End-to-end Localization by PointNeRF *CAD&CG lab*

Zhejiang University *April 2023 - June 2023*

- Localizaton method inspired by PointNeRF(CVPR 2022 Oral) and Hloc(winner of the CVPR 2020 challenge), utilizing the point features to achieve a rough initial pose by PnP, and refining it using the rendering ability of NeRF. .
- Under the guidance of *Prof.Zhaopeng Cui* and a graduate student, helping run experiments and verify the results.

Unseen Object Grasp *Grasp lab*

Zhejiang University *July 2023 - Present*

- A project by myself, aiming to achieve a robust robot system for unseen object grasping. .
- Under the guidance of *Prof.Huixu Dong* in the School of Mechanical Engineering. Having learned some missing classes in this new area, read and implemented some related articles. Building my system currently and trying to refine it afterward.

Course labs *College of Computer Science and Technology*

Zhejiang University *September 2021 - current*

- Mechine Learning: Handwriting numerals recognition on mnist. Using traditional machine learning methods like SVM, and deep neural networks like MLE, CNN, etc. Adding tricks like data augmentation, feature extraction by VAE, etc.
- Computer Graphics: Design a 3D horror game from scratch using opengl. Audio, action, collision detection etc. are added.
- Computer Organization and Design: Designed and implemented a five-stage pipelined CPU with interruption on FPGA using verilog.
- Operating System: Building a mini Linux kernel from scratch.
- Database system: Building a small database system with teammates.

Publications

ImTooth: Neural Implicit Tooth for Dental Augmented Reality
Hai Li, Hongjia Zhai, Xingrui Yang, Zhirong Wu, Yihao Zheng, Haofan Wang, Jianchao Wu, Hujun Bao, Guofeng Zhang
IEEE Transactions on Visualization and Computer Graphics (2023) pp. 1–10. 2023

Languages

English Ielts 7.0

Skills

Programming Python (PyTorch, Cuda), C/C++, Java, Html, etc.
Miscellaneous Linux, LaTeX(Overleaf/R Markdown), Microsoft Office, Git.

References available upon request.