Yinghao Zhang

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EDUCATION

SHANGHAITECH UNIVERSITY, Shanghai, China — Aug. 2020 – Jun. 2024 (Expected)
Bachelor of Engineering Candidate, Computer Science and Technology

- GPA: 3.89/4.0 | Rank (Major): 2/177 | GPA(Major): 4.0/4.0
- Merit Award, Ranked Number One (Jan. 2022)
- National Scholarship, one of two recipients at ShanghaiTech (Oct. 2023)

UNIVERSITY OF CALIFORNIA AT BERKELEY, Berkeley, CA — Aug. 2022 – May 2023
Global Learning and Outreach from Berkeley Engineering (GLOBE) Exchange Program

- Computer Science coursework
- GPA: 4.0/4.0

RESEARCH INTEREST

Making perception, reconstruction and rendering more realistic and efficient through creating breakthroughs in **Computer Vision** and **Computer Graphics**.

EXPERIENCE

SHANGHAITECH UNIVERSITY, Shanghai, China — **2021 – Present**

Undergraduate Researcher, Head and Hand Lab | PI: Prof. Jingyi Yu — *Aug. 2021 – Aug. 2022*
Second author of paper on **SIGGRAPH-Asia 2022**.

- Pose part leader: used AR tags to capture the pose and motion of human jaw in a light stage as data to feed into a network, where orthogonal Procrustes and Savitzky-Golay filter were used to make the trajectory of the AR tags accurate and smooth, reaching an eventual accuracy of 0.1mm. Aligned light stage data with CT scan data.
- Reconstructed human faces, figured out coordinate transformation and converted Euler angles, rotation vectors and rotation matrices to fit different uses.
- Rendered the images of head model using Blender. Committed experiments of its applications and composed results in section of paper titled *SCULPTOR: Skeleton-Consistent Face Creation Using a Learned Parametric Generator*. The paper was accepted by SIGGRAPH-Asia in Aug. 2022.

Member, Deemos Technologies Inc. | PI: Prof. Jingyi Yu — *Jun. 2023 – Oct. 2023*

- Enhanced the performance and appearance of ChatAvatar, a 3D head reconstruction software product, through testing, fixing bugs and modifying parameters and incorporating MiDaS as depth prior into the product. ChatAvatar is a product of Deemos, a tech company founded by faculty and senior students.

Member, Multi-disciplinary Artificial Reality Studio | PI: Prof. Jingyi Yu — *Jul. 2021 – May 2022*

- Assisted PhD students' Studio projects related to building a Metaverse of avatars for each student participating in the ShanghaiTech graduation ceremony by searching and modifying several Python repositories on GitHub, including VOCA, ESRGAN, and LAMA.

***Team Leader, Gold Medal, The 45th ICPC (International Collegiate Programming Contest) Asia Kunming Regional* Contest,** ACM (Association for Computing Machinery) — *Apr. 2021*

- Solved 7 of 13 contest problems in 5 hours, ranking 21st among 813 teams, by designing flexible algorithms in C++ to enable them to solve as many problems as possible in limited time.
- Led a team of three to write a program to give the expected output under each sample input for each problem, which included dynamic programming, data structures, advanced counting, and network flow.

***Teaching Assistant,* CS101:** Algorithms and Data Structures — *Nov. 2023 – Jan. 2024 (Expected)*

- Made and graded homework, quizzes, and exams. Instructed a section group of 40 students; proctored quizzes and explained answers; held weekly office hours to review material for a course of 200 students.

PROJECTS

UNIVERSITY OF CALIFORNIA AT BERKELEY, Berkeley, CA **2022 – 2023**

Test-time-Training Project | Senior Student Advisors: Ren Wang & Yossi Gandelsman *Aug. 2022 – Sep. 2023*

- Coding using Python and PyTorch for creating Visual Question Answering tasks using only captions of images by using BLIP and Llama.
- Conducted research with project team on Test-time-training for segmentation tasks. The overall objective is to generalize the test-time-training method proposed in another paper (*Mask2Former*, Bowen Cheng et al) to segmentation task on videos.
- Re-implemented Mask2Former model in Masked Auto-encoder style. Completed support of PyTorch2.0.

SHANGHAITECH UNIVERSITY, Shanghai, China **2021 – Present**

Computer Graphics (CS184) Course Project | Prof. Ren Ng & Prof. James O'Brien *Mar. 2023*

- Implemented Ball Pivoting Algorithm to compose a report and a video. Project Website

Deep Learning (CS182) Course Project | Prof. Anant Sahai *Dec. 2022*

- Implemented Vision Transformer using JAX in Python and made it a homework.

Compilers (CS131) Course Project | Prof. Fu Song *Apr. 2022 – Jun. 2022*

- Used Flex, Bison and LLVM to write a parser for Chocopy.

Introduction to Machine Learning (CS182) Course Project | Prof. Lu Sun *May 2022*

- Implemented several classifiers on water quality using existing data, including KNN, AdaBoost, logistic regression, random forests, SVM, XGBoost and neural networks.
- Summarized our findings in report as lead writer.

ACTIVITIES

FIRST PRESBYTERIAN CHURCH, BERKELEY, Berkeley, CA **2023**

Volunteer, CityTeam & First Presbyterian Church *Jun. 2023*

- Volunteered to serve and distribute food and clothing to unhoused people.
- Conversed with unhoused people to hear about their daily situations and encouraged them.

SHANGHAITECH UNIVERSITY, Shanghai, China **2021 – Present**

Volunteer, Student Affairs Department, Summer Camp for Master Enrollment, Shanghai, China *Jul. 2023*

- Organized the senior students communication activity, invited representative master students to give talks to undergraduate students from other universities interested in pursuing a master degree in ShanghaiTech.

Team Member, Social Practice Project, Quankou Village, Hubei Province, China *Jul. 2021*

- Conducted onsite research on poor villages' health care system and their major sources of income like tea planting and poultry raising.
- Identified the key social problem of left-behind children through interviews with members of villages, in which most young adults work as migrant workers in cities while leaving their elders and children in the mountains, and delivered a report on recommendations to mitigate the situation, focusing on shifting resources to upgrading transportation infrastructure and logistics to attract economic opportunities.

Mentor, Student Affairs Department, Top Student Workshop, Shanghai, China *May 2022*

- Shared experience on studying programming and mathematics with fellow students at ShanghaiTech, emphasizing the importance of making plans early and finding an appropriate study-life balance.

SKILLS

- Languages: Mandarin (Native), English (Fluent), TOEFL: 105 (R29/L28/W25/S23, Sep. 2023), GRE: 324 + 4.0 (V154/Q170, Jul. 2023)
- Computer Skills: C/C++, Python, PyTorch, RISC-V, MATLAB, Blender, LaTeX. Mastered basic algorithms in data structure, string theory, graph theory, polynomial theory, number theory, network flow, computational geometry, dynamic programming.