Zhanhe Shi

ShanghaiTech University

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Education

ShanghaiTech University *Shanghai, China*

School of Information Science and Technology *Sep 2021 - Present*

- GPA: 3.3/4.0
- **Courses:** Machine Learning, Econometric Analysis Methods and Modeling, Mathematical Modeling

University of California, Berkeley *Berkeley, CA, USA*

College of Engineering *Aug 2023 - Present*

- GPA: 3.9/4.0
- **Courses:** Designing, Visualizing and Understanding Deep Neural Networks, Intro to Computer Vision and Computational Photography

Experience

Shanghai ELan Intelligent Information Technology Co., Ltd. *Shanghai, China*

Research Intern *Aug 2023 - Present*

- Conducted research and evaluation of multi-view human body keypoint matching algorithms, and generated 3D body skeletons.
- Assessed existing single-view human reconstruction models on new dataset to evaluate data quality
- Assisted in designing IMU magnetometer calibration algorithms

Projects

HOI-M^3: Capture Multiple Humans and Objects Interaction with Contextual Environment *Shanghai, China*

ShanghaiTech University *Aug 2023 - Mar 2024*

- Assisted in capturing a multi-human multi-object interaction dataset
- Aided in using Segment Anything Model for annotating and tracking human and object masks
- Employed ViTPose to detect single-view human body keypoints and performed multi-view matching to optimize the human body SMPL model
- Accepted by CVPR 2024

3D Character Generation Based on ControlNet and LoRA *Berkeley, CA, USA*

University of California, Berkeley *Nov 2023 - Dec 2023*

- Utilized LoRA to fine-tune existing text-to-image diffusion models, enhancing the consistency of generated character images
- Employed ControlNet with 3D human pose estimation to maintain spatial consistency in multi-view images through depth and keypoints prediction
- Generated 3D character models using 3D Gaussian point clouds

Neural Radiance Field Implementation Based on Multilayer Perceptron *Berkeley, CA, USA*

University of California, Berkeley *November 2023*

- Developed a Multilayer Perceptron network to generate 3D object models from 2D multi-view photographs
- Restored the absolute coordinate system projection relationship of input pictures based on given camera parameters and spatial information
- Built and trained a residual neural network using PyTorch, applying volume rendering to recreate 3D object prototype

Face Morphing and Modelling a Photo Collection *Berkeley, CA, USA*

University of California, Berkeley *Oct 2023*

- Created morphing animations between different faces by annotating image keypoints, employing Delaunay triangulation, affine transformations, and cross-dissolve methodology
- Computed and modeled the average face of a given group using mediapipe for keypoint maps within a specified dataset
- Constructed mappings between novel expressions and observations within the dataset to create morphing animations.

Smart Management Tool for Dormitory Public Refrigerators *Shanghai, China*

ShanghaiTech University *Nov, 2021 - Dec, 2021*

- Developed a real-time recording, management, and alert tool for public refrigerators monitoring system using JavaScript, deployed the product via WeChat through WeUI
- Identified pain points and target user personas through user research, interviews, and multi-round qualitative analysis with potential users, enhancing the product design with features like photo uploading and personalized expired food alerts
- Produced a 20-page report presentation and product demonstration video

Skills

Programming Python (NumPy, Matplotlib, Pytorch, OpenCV), C/C++, MATLAB

Miscellaneous Linux, LaTeX, Microsoft Office, Git, Tencent Cloud, Simulation of Urban Mobility, Wind, Blender