

Zhanhe Shi

ShanghaiTech University

✉ zhanhe.shi@outlook.com | 🏠 bio.zhanheshi.com | 📁 github.com/saltfish-len

Education

ShanghaiTech University

Shanghai, China

School of Information Science and Technology, Bachelor of Computer Science and Technology

Sep 2021 - Present

- **GPA:** 3.44/4.0
- **Courses:** Machine Learning, Econometric Analysis Methods and Modeling, Mathematical Modeling
- **Honors & Awards:** Outstanding Award in the First Admissions Promotion Project Competition at ShanghaiTech University in 2022
Outstanding Individual in Undergraduate Social Practice at ShanghaiTech University in 2022
Outstanding Student, 2023-2024

University of California, Berkeley

Berkeley, CA, USA

College of Engineering, Berkeley Extension Global Exchange Program, Computer Science

Aug 2023 - May 2024

- **GPA:** 3.83/4.0
- **Courses:** Designing, Visualizing and Understanding Deep Neural Networks, Intro to Computer Vision and Computational Photography

Internship Experience

Hundsun Technologies Inc.

Hangzhou, Zhejiang, China

Intern, Junior Software Engineer

May 2024 - Jul 2024

- Conducted research on existing major datasets and related models for document layout analysis.
- Evaluated the accuracy and performance of several open-source models on the Chinese dataset CDLA.
- Retrained LayoutLMv3, YOLO, and VGT models, comparing their performance and accuracy.

Research & Project Experience

HOI-M3 : Capture Multiple Humans and Objects Interaction within Contextual Environment

Shanghai, China

Third Author, Frontier Science Research Base on Intelligent Human-Machine Collaboration and Interaction

Aug 2023 - Mar 2024

- Assisted in capturing a multi-human multi-object interaction dataset.
- Used the Segment Anything Model to annotate and track masks for people and objects.
- 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. (arXiv:2404.00299v2 [cs.CV] 2 Apr 2024)

FGSM-Based Attack on SAM Model

Berkeley, CA, USA

Team Leader, University of California, Berkeley

Apr 2024

- Implemented FGSM (Fast Gradient Sign Method) to attack SlimSAM model and generate adversarial samples.
- Conducted quantitative evaluations of adversarial attacks on SlimSAM by calculating mIoU between original and adversarial masks.
- Developed a Gradio-based web interface to support image uploads and visualize attack masks based on selected weights.

3D Character Generation Using ControlNet and LoRA

Berkeley, CA, USA

Team Member, University of California, Berkeley

Nov 2023 - Dec 2023

- Used LoRA to fine-tune the existing text-to-image diffusion model, enhanced the consistency of characters features.
- Combined ControlNet with 3D human pose solution, controlled the spatial consistency in multi-view images through depth and key points.
- Generated 3D character models using Gaussian splatting.

Neural Radiance Field Implementation Based on Multilayer Perceptron

Berkeley, CA, USA

Personal Project, University of California, Berkeley

Nov 2023

- Built a Multilayer Perceptron (MLP) model to generate 3D object models from 2D multi-view object images.
- Restored the projection relationship of images in the world coordinate system by utilizing given camera parameters and spatial information.
- Developed and trained a residual neural network model using PyTorch, leveraging voxel-based rendering to reconstruct 3D object models.

Smart Management Tool for Dormitory Public Refrigerators

Shanghai, China

Team member, ShanghaiTech University

Nov, 2021 - Dec, 2021

- Developed a management tool for public refrigerators monitoring system using JavaScript, deployed the product via WeChat through WeUI.
- User research revealed pain points and personas, driving product enhancements like photo uploads and personalized food alerts.
- Produced a 20-page report presentation and product demonstration video.

Skills

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

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