Shenghan Zhou

Cell Phone: (949) 795-2366 | E-mail: 15889398320@163.com | Address: 398 Fawn Ct, Fremont, CA 94539

EDUCATION

Chongqing University (CQU)	Sep. 2021-Present
• Program: Bachelor of Engineering in Artificial Intelligence (anticipated in June 2025)	Chongqing, China
• GPA: 92/100, 3.848/4.0 Major Ranking: 1/63 Grade Ranking: 3/253	
UC Berkeley	Aug.2024-Dec. 2024
Program: Berkeley Global Access (BGA) Program	Berkeley, CA
• GPA: 3.8/4.0	
UC Irvine	Jun. 2024-Aug. 2024
• Program: UCInspire GPA: 4.0/4.0	Irvine, CA
PURLICATION	

• **Zhou, S.** (2024). Accelerating Style Transfer: Enhancing Efficiency of Diffusion-based Models with Advanced Sampling Methods. Highlights in Science, Engineering and Technology. 124. 66-73. 10.54097/035cr916.

 Sun, S., Araujo, G., Xu, J., Zhou, S., Zhang, H., Huang., Z., You, C., & Xie, X. (2024). CoMA: Compositional Human Motion Generation with Multi-modal Agents. Submitted to The IEEE/CVF International Conference on Computer Vision (ICCV) 2025. https://doi.org/10.48550/arXiv.2412.07320

RESEARCH

UCInspire - CoMA: Compositional Human Motion Generation with Multi-modal AgentsJun. 2024-Nov. 2024Group Member, Advisor: Prof. Xiaohui Xie, XIE Lab, UCInspireIrvine, CA

- Proposed the multi-modal based, compositional human motion generation framework CoMA framework to refine complex human motion generations from textual descriptions
- Created SPAM, a masked generative model where four codebooks and encoders are learned to represent four body parts, while a shared motion decoder learns to output whole human motions by fusing four local body part codes
- Leveraged Multi-modal LLMs' reasoning capabilities to decompose complex motion generation tasks into manageable sub-tasks and automatically compose them into complete motions.
- Engineered an editing pipeline by utilizing Video Language Models (VLMs, which are instruction-tuned on the Hu-manML3D dataset) for autonomous motion correction and GPT-40 to generate correction prompts
- Created Motion Alignment Score, a new evaluation metric, to increase the assessment quality of the human motion generation model by rendering motion into video, encoding it to obtain a video embedding, and calculating the similarity between the video and text embedding

Accelerating Style Transfer: Enhancing Efficiency of Diffusion-based Models with Advanced Sampling Methods

Independent Study

Jul. 2024-Aug. 2024

- Explored recent advancements in accelerated sampling methods to expedite the image generation process for top-performing style transfer models
- Integrated various accelerated sampling techniques into the StyleID framework, including Fast Sampling of Diffusion Probabilistic Models (FastDPM), Pseudo Numerical Methods for Diffusion Models (PNDMs), DPM-Solver, and Unified Predictor-Corrector (UniPC)
- Significantly reduced the Number of Function Evaluations (NFE) from 50 to 10 with UniPC while maintaining image quality
- Increased the efficiency of high-quality stylized image generation fivefold in comparison with existing methods **PROJECTS**

Design and Implementation of 3D Human Body Reconstruction System

Mar 2025-Jun. 2025

Independent Study, Advisor: Prof. Ji Liu,, School of Big Data & Software Engineering, CQU Chongqing, China

Proposes a single-image 3D human body reconstruction method based on diffusion models, aiming to reduce

hardware requirements and improve accessibility compared to multi-view or 3D scanning approaches.

- A multi-view diffusion model is used to synthesize RGB images and normal maps from a single frontal image.
- A Vision Transformer (ViT)-based encoder extracts global features, while a multi-view decoding Transformer fuses cross-view information to enhance representation of texture and geometry.
- A dual-branch feed-forward network then learns implicit geometric and color fields
- Quantitative evaluations on the THuman2.0 and CAPE datasets rank only second to SOTA model

Deep Learning and Neural Networks: Theory and Applications

Group Leader, Advisor: Pro. Mark Vogelsberger, Massachusetts Institute of Technology

• Compared the performance of logistic regression and feedforward neural networks in the handwritten digit recognition task using the Adam and Adagrad optimizers

May 2024-Jul. 2024

Jun. 2023-Jul. 2023

Remote

- Identified the fastest convergence and highest classification accuracy with the feedforward neural network combined with the Adam optimizer
- Discovered that L2 regularization effectively prevented overfitting, resulting in a DICE score of 0.993, by training U-Net using diverse strategies in image segmentation to prevent overfitting
- Implemented text-to-image generation tasks by using the Diffusion model and replicating it based on the paper *Scalable Diffusion Models with Transformers*, validating the experiments in the process
- Led a team to improve CycleGAN by improving U-Net architecture, successfully replicating the artistic styles of Van Gogh, Monet, and Ukiyo-e

Financial Fraud Detection Based on Dynamic Graph Representation LearningSep. 2023-May. 2024Group Member, Advisor: Prof. Yueyang Wang, School of Big Data & Software Engineering, COU Chongqing, China

Proposed a novel model architecture that integrates spatial and temporal aggregation within graph structures.
Experimental results demonstrate that this design effectively captures the spatiotemporal features of dynamic graph data, achieving superior performance compared to most existing dynamic graph neural networks.

Deep Learning Based AI Face Recognition System

Independent Study, Advisor: Gaoyang Pan, Lecturer, School of Big Data & Software Engineering, CQU Chongqing, China

- Collected 8000 facial photos using OpenCV and processed images for feature extraction and data normalization
- Created a training set of 6266 photos and a test set of 1567 photos by critically dividing the original dataset
- Constructed, trained, and optimized a CNN model with TensorFlow, achieving a high face recognition rate of 91%
- Engineered a login system that allows users to log in and sign up for facial recognition by building a web with Flask and implementing recognition of real-time images

HONORS & AWARDS

Honorable Mention in Mathematical Contest in Modeling	Feb.
2024	
First Prize in CUMCM (Contemporary Undergraduate Mathematical Contest in Modeling) (Top 1%)	Nov.
2023	
Second Class of CQU Scholarship for Outstanding Students (Top 8%)	May
2023	
National Scholarship (Top 0.2%)	Dec. 2022
First Class of CQU Scholarship for Outstanding Students (Top 3%)	Nov.
2022	
Outstanding Student granted by CQU (Top 15%)	Nov.
2022	
First Prize in 2022 CQU Mathematics Contest (Top 11%)	Jul.
2022	

EXTRACURRICULAR ACTIVITY

CQU Youth League Committee Student Development Center

Member, Publicity Department

- Conducted investigations on students' living conditions, collected suggestions, and wrote reports
- Created posters and engaged in publicity activities to raise students' awareness of protecting their rights
- Received Excellent Member award in the first semester of the 2021-2022 academic year

SKILLS

Software: C++ (2 years), C (3 years), Python (2 years), MATLAB (2 years), Lingo (1 year) Languages: Mandarin (Native), English (Advanced) Oct. 2021-Jun. 2022