Jiashen Du

Curriculum Vitae

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EDUCATION

University of California, Berkeley, Berkeley, CA 2024.08 - 2025.05 (Expected)
Junior Exchange student, Computer Science
- Total GPA: 3.91/4.0
- Related courses: Graduate Computer Vision, Foundations of Computer Graphics, Optimization Models in Engineering, Introduction to Artificial Intelligence, LLM Agents, Advanced LLM Agents, Computer Security.

ShanghaiTech University, Shanghai, China 2022.09 - 2026.06 (Expected)
Junior, Computer Science
- Major GPA: 3.77/4.0
- TOEFL: 107/120
- Related courses: Introduction to Machine Learning, Discrete Mathematics, Computer Architecture, Mathematical Analysis, etc.

RESEARCH AND WORK EXPERIENCE

VRVC Lab, Frontier Base, ShanghaiTech University 2023.02 - Present
Undergraduate Research Intern Shanghai, China
Highly involved in the work of the subject group, conducting and participating in research related to 3D Human-Object-Interaction reconstructions. Previous work has been accepted by CVPR 2024 and mainly focuses on fusing LLMs with computer vision now.

Shanghai Elan Smart Sense Information Technology Co.,LTD. 2023.04 - 2024.10
Deputy researcher of Research Team & Head of Motion Capture Team Shanghai, China
Modified and refined the previous work of the 4D-Association Graph. Implemented a fully regressive way to recover human poses from a single RGB image, then refined and showed up in I'M HOI. Acknowledged and benchmarked various motion capture reconstruction methods like MVPose, OpenPose, and SMPLify-X. Helped set up the motion capture environment and taught new lab members about the prerequisites and the procedure of motion capturing. Designed and contributed to the IMHD^2 dataset.

PUBLICATIONS

Conference Proceedings
I'M HOI: Inertia-aware Monocular Capture of 3D Human-Object Interactions
Chengfeng Zhao, Juze Zhang, **Jiashen Du**, Ziwei Shan, Junye Wang, Jingyi Yu, Jingya Wang, Lan Xu.
Now accepted by The IEEE/CVF Conference on Computer Vision and Pattern Recognition(CVPR). 2024
DOI: 10.1109/CVPR52733.2024.00076

SELECTED PROJECTS

DREAMoR: Diffusion-based Reconstruction and Motion Prior
We introduce DREAMoR, a novel motion reconstruction framework that combines latent-space diffusion with motion prior optimization. We incorporate multi-step DDIM denoising into the SDS optimization, which leads to more stable and accurate reconstructions compared to single-step prediction. Our experiments demonstrate that DREAMoR produces more accurate and realistic motion reconstructions than prior methods, especially in the presence of occlusion.
Participated and was responsible for the experiment and optimization framework part of the project.

Are LLMs complicated ethical dilemma analyzers?
This is a research track project for AgentX competition and COMPSCI194-280: Advanced LLM Agents. We introduce a benchmark dataset comprising 196 real-world ethical dilemmas and expert opinions and collect non-expert human responses for comparison. We evaluate multiple frontier LLMs using a designed composite metric framework. Metric weights are computed through an inversion-based ranking alignment and pairwise AHP analysis, enabling fine-grained comparison of model outputs to expert responses. Our results show that LLMs generally outperform non-expert humans but struggle with parts that require contextual abstraction.

While less structured, human responses occasionally achieve comparable semantic similarity, suggesting intuitive moral reasoning.
Led and participated in all parts of the project. Held the project code repository.

How GPT learns layer by layer
This is a fundamental track project for COMPSCI194-196 Special Topics: LLM Agents and LLM Agents hackathon. We focused on exploring robust and generalizable internal representations of lightweight LLMs and investigating the progression of learned features with linear probes and sparse autoencoders in OthelloGPT. Our experiments reveal that SAEs provide a more robust and disentangled decoding of the features the model is learning, particularly for compositional attributes.
Participated as the **first author** of the project. Contributed most of the code work for the project and held the project code repository.

Zen
This is a Meta Quest track project for the Stanford XR Hackathon. We focused on recovering human psychological dysfunctions, aiming to provide a comprehensive treatment protocol by designing multiple simple interactive meditation games utilizing the power of Meta Quest 3. We build interactive environments from scratch in Unity; users can choose different environments, background music, and meditation guidance in Zen. This project received attention and high praise from a judge, an Apple spatial computing department staff member working on the meditation app in Vision Pro.
Led and contributed most of the code work for Zen, implemented the riverside scene of the Zen game, and held the project code repository.

AWARDS AND HONORS

CUMCM: Chinese University Mathematical Contest in Modeling
The third prize
Year: 2023

ACTIVITIES AND SKILLS

ACTIVITIES
President of ShanghaiTech HiFi Research Club 2023.05 - Present
Designing special amplifiers and leading club members to finish annual projects like replicating discontinued HiFi products and making electrostatic headphones. Organized events and club activities, such as going to the audio expos. I was invited to host a headphone and IEM design lecture at the school technology festival.

SKILLS
Programming Skills: Python(Proficient), C++(Competent), C(Competent), Rust(Familiar with)
Language Skills: English(Fluent), Chinese(Native)