

Libo Zhang

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EDUCATION

Bachelor of Mathematics and Physics + Energy and Power Engineering(dual degree) *September 2021 - June 2025*
Weiyang College, Tsinghua University

Main Courses: *Fundamentals of Computer Programming(A), Data Structures(A), Fundamentals of Computer Graphics (A-), Fundamentals of Algorithm Analysis and Design (A-), Advanced Calculus(1) (A-)...*

PREPRINT

High-Quality Mesh Blendshape Generation from Face Videos via Neural Inverse Rendering

Xin Ming*, Jiawei Li*, Jingwang Ling, **Libo Zhang**, Feng Xu. arXiv preprint 2024

RESEARCH EXPERIENCE

3D Gaussian-Based Real-Time Relighting *October 2023 - Present*
Research Assistant to Prof.Feng Xu, 3D Vision and Graphics Lab, School of Software, Tsinghua University

- Proposed a 3D Gaussian-based relighting technique that bridges the gap between real-time and high quality in relighting
- Implemented a model for learning neural light transport from light stage datasets that can learn complex material details

High-Quality Mesh Blendshape Generation from Face Videos via Neural Inverse Rendering *June 2023 - November 2023*
Research Assistant to Prof.Feng Xu, 3D Vision and Graphics Lab, School of Software, Tsinghua University

- Proposed a video-based facial rigging technique that bridges traditional animation pipelines and neural inverse rendering
- Developed a novel blendshape deformation technique that parametrizes differential coordinates augmented with tetrahedral connections, involving a set of semantic regularization into a joint optimization
- Implemented a neural regressor modeling time-varying motion parameters to achieve implicit time synchronization across multiple views

PROJECT EXPERIENCE

Offline Ray Tracing Renderer *March 2023 - June 2023*
Fundamentals of Computer Graphics - Final Project

- An offline render based on path-tracing
- Supports acceleration structures, texture mapping, depth of field, complex meshes, and surface intersection

Monte Carlo Search-based Gomoku AI *March 2023 - June 2023*
Introductory Course to Artificial Intelligence - Final Project

- An artificial intelligence mini-program for Gomoku based on Monte Carlo search

AWARDS

First Prize for Comprehensive Excellence Scholarship at Tsinghua University *October 2022*
Second Prize for Science and Innovation Excellence Scholarship at Tsinghua University *October 2022*
Special Prize in Tsinghua Software Design Competition *February 2023*
First Prize for Science and Innovation Excellence Scholarship at Tsinghua University *October 2023*

INTERESTS AND SKILLS

Interests Computer Graphics, 3D Vision, including neural rendering, visual geometric computing
Simulation and Software Blender, Unity, Meshlab
Programming Python, Pytorch, C++, Cuda, Linux, Matlab