RESUME

Zitian Zhang

Université Laval

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EDUCATION

PhD Student in Computer Science, Université Laval 2023.09 – Present
- Research under Prof. Jean-François Lalonde, Computer Vision and Systems Lab
- Interest: Virtual Object Insertion, Image Edit, Diffusion Models
- Title: Object compositing via generative models

M.Eng. in Computer Technology, South China University of Technology 2020.09 – 2023.07
- GPA: 3.7/4
- Research under Assoc. Prof. Chuhua Xian, Multimedia Lab
- Interest: Depth Estimation, Indoor Light Estimation

B.Mgmt. in E-Commerce, Xidian University 2016.09 – 2020.07
- GPA: 3.7/4, Top 1%
- Designed and developed a 2D mini game as a game designer at Tuyou games, in Summer 2019

RESEARCH EXPERIENCE

SpotLight: Local Lighting Control with Shadows via Diffusion, 2nd author, 2024.06 – Present
- Object compositing via diffusion with controllable shading and shadow generation

Indoor Lighting Estimation Project with Meta, Main Contributor, 2024.09 – Present
- High performance HDR indoor environmental lighting estimation

ZeroComp: Zero-shot Object Compositing from Image Intrinsics via Diffusion, 1st author, 2023.09 – 2024.10
- Zero-shot 3D object compositing approach that **does not require paired composite-scene images** during training
- Trained on synthetic indoor data only, but can be easily extended to 2D/3D object compositing and material editing
- Developed a novel, realistic and automatically generated object compositing dataset for evaluation
- Accepted to **WACV 2025**; Project page: **https://lvsn.github.io/ZeroComp**

Delving into Multi-illumination Depth Estimation, 2nd author, 2021.07 – 2023.06
- Introduced a single-view multi-illumination dataset, providing realistic RGB-D pairs
- Developed a post-processing module that enables robust prediction under changing environments
- Accepted to IEEE Transactions on Multimedia

PUBLICATIONS

[1] **Zitian Zhang**, Frédéric Fortier-Chouinard, Mathieu Garon, Anand Bhattad, and Jean-François Lalonde. ZeroComp: Zero-shot object compositing from image intrinsics via diffusion. IEEE/CVF Winter Conference on Applications of Computer Vision, 2025

[2] Yuan Liang, **Zitian Zhang**, Chuhua Xian, and Shengfeng He. Delving into multi-illumination monocular depth estimation: A new dataset and method. IEEE Transactions on Multimedia, 2024

[3] Chuhua Xian, Kun Qian, **Zitian Zhang**, and Charlie CL Wang. Multi-scale progressive fusion learning for depth map super-resolution. arXiv preprint arXiv:2011.11865, 2020

PUBLICATIONS IN PREPARATION

[1] Frédéric Fortier-Chouinard, **Zitian Zhang**, Mathieu Garon, Anand Bhattad, and Jean-François Lalonde. SpotLight: Local Lighting Control with Shadows via Diffusion

PATENT IN APPLICATION

SYSTEMS AND METHODS FOR COMPOSITING A VIRTUAL OBJECT IN A BACKGROUND IMAGE, Zitian Zhang, Frédéric Fortier-Chouinard, Mathieu Garon, Anand Bhattad, and Jean-François Lalonde, U.S. Patent Application N° 63/705,195 filed on October 9, 2024

INTERN EXPERIENCE

Unreal Engine Game Developer Intern

Oasis: A Simulation Game, Unreal Engine Group, Alibaba Lingxi Interactive, 2022.06-2022.08

- Out of my interest in games and rendering, I decided to intern at a game company to experience the differences between academic research and actual game development
- Independently developed a mini simulation game using Unreal Engine 4 with blueprints and C++, involving game logic implementation, user interface development, and basic AI through behavior trees

Rendering Developer Intern

Real-time and Cloud Renderers for Fashion Industry, Rendering Engine Group,
Revobit (A Start-up), 2021.12-2022.05

- Participated in a photo-realistic cloud rendering solution for digital fashion, delivering high-quality visualizations of apparel and accessories
- Optimized the real-time rendering system, resolved a rendering issue of transparent materials by applying the idea of energy distribution in BSDF reflection
- Customized material and shader setups for the physically-based rendering server

SKILLS

Python, C++, PyTorch, Blender, Real-time Rendering, Unreal Engine

SERVICE

TVCG reviewer, 2024.11 – Present