

# Chunjiang Liu

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## EDUCATION

### Carnegie Mellon University

Pittsburgh, PA *Master of Science in Electrical and Computer Engineering* | GPA: 3.83/4.00 Jan 2023 - Dec 2024

Courses: Optimization, Computer Vision, Visual Learning & Recognition, Multi-modal ML, Generative Modeling

### University of Electronic Science and Technology of China (UESTC)

Chengdu, China

*Bachelor of Communication Engineering* | GPA: 3.84/4.00

Sept 2018 - June 2022

Courses: Calculus, Linear Algebra, Probability and Statistics, Signal and System

## WORK EXPERIENCE

### YAMAHA MOTOR SOLUTIONS CO., LTD. XIAMEN

Xiamen, China

*Innovation Center Intern*

Jul 2022 - Oct 2022

- Built a dataset of industrial components with noisy backgrounds, enabling system robustness.
- Developed an unsupervised image segmentation algorithm based on mutual information maximization loss.
- Achieved strong visualization performance on the built dataset.

## PROJECT EXPERIENCE

### A Light-weighted Transformer for Next Word Prediction

CMU, Pittsburgh, PA

*Course Project* | Advisor: Yuejie Chi

Spring 2024

- Designed a lightweight transformer based model for next-word prediction on edge devices like mobile phones.
- Applied knowledge distillation techniques, trained on Daily Dialog dataset (21,976 tokens), Achieved a testing perplexity of 35 and demonstrated qualitative performance comparable to GPT-2.

### Improvement on Zero-Shot Text-to-Video Generation

CMU, Pittsburgh, PA

*Course Project* | Advisor: Guila Fanti

Spring 2024

- Investigated frame consistency problem in zero-shot video generation models.
- Proposed two enhancements 1) LLM-based prompt elaboration. 2) Few-shot learning for frame consistency.
- Achieved improved CLIP scores (30.4 - ours vs 29.6 - baseline) on benchmark datasets.

### Stage-Aware Vision-and-Language Navigation with Enhanced Auxiliary Loss

CMU, Pittsburgh, PA

*Couse Project* | Advisor: Daniel Fried

Fall 2024

- Introduced a weighted angular distance loss to improve navigation decision granularity.
- Developed LLM-based instruction paraphrasing and instruction segmentation for data augmentation.
- Achieved a success rate (SR) of 53.2% on unseen environments on R2R dataset, outperforming strong baselines such as Speaker-Follower (2018), EnvDrop (2019) and ViL-CLIP (2021).

## PUBLICATION

- Yizhou Zhao, **Chunjiang Liu**, Haoyu Chen, Bhiksha Raj, Min Xu, Tadas Baltrusaitis, Mitch Rundle, HsiangTao Wu, Kamran Ghasedi, “Total-Editing: Head Avatar with Editable Appearance, Motion, and Lighting”, submitted to *ICCV* 2025
- Yizhou Zhao, Haoyu Chen, **Chunjiang Liu**, Zhenyang Li, Charles Herrmann, Junhwa Hur, Yinxiao Li, Ming-Hsuan Yang, Bhiksha Raj, Min Xu, “Toward Material-Agnostic System Identification from Videos”, submitted to *ICCV* 2025