

Chunjiang Liu

chunjiang.liu.richard@gmail.com | chunjiangliu.com | (+1) 4126164459

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, Deep Learning, Advanced Computer Vision, Vision Learning and Recognition, Multi-modal Machine learning, Deep Generative Modeling*

University of Electronic Science and Technology of China

Chengdu, China

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

Sep 2018 - Jun 2022

- Courses: *Calculus, Linear Algebra, Probability and Statistics, Signal and System, Information Theory, Digital signal Processing*

TECHNICAL SKILLS

- Languages: Python, Go, JavaScript/TypeScript, SQL
- Frameworks: PyTorch, React/Next.js, FastAPI, PostgreSQL, MongoDB, LanceDB,
- Tools: Git, Linux, Incus/LXD, Tailscale, Claude Agent SDK, HuggingFace, Blender

WORK EXPERIENCE

BAKE AI INC.

San Francisco, CA

Member of Technical Staff

Jan 2026 - Present

- Designed and built IBench: interactive leaderboard UI, expert-crafted benchmark problems and automated evaluation environment.
- Developed ArtArena: interactive arena web platform, and automated 3D rendering and text-to-image data generation pipeline.
- Engineered Eval: full-stack agent evaluation platform supporting 600+ environments with real-time SSE streaming and full UI/UX features.
- Architected DatasetVecDB: multi-agent pipeline for automated dataset discovery, quality scoring, multi-modal vectorization, storage and semantic query.
- Built Agent Sandbox: multi-cluster sandbox platform with two-level isolation (VMs + containers) and Go-based REST orchestrator for full lifecycle control and monitoring.

CARNEGIE MELLON UNIVERSITY

Pittsburgh, PA

Research Associate

Jan 2024 - Dec 2025

- Multi-object dynamic reconstruction and physics estimation via differentiable simulation.
- Material-agnostic dynamic reconstruction with neural constitutive models.
- Head avatar editing with joint appearance, motion, and lighting control.

YINZCAM INC.

Pittsburgh, PA

Research Intern

May 2023 - Aug 2023

- Built real-time in-game and biometric data collection and analysis system for esports players.

YAMAHA MOTOR SOLUTIONS CO., LTD. XIAMEN

Xiamen, China

Innovation Center Intern

July 2022 - October 2022

- Developed an unsupervised image segmentation algorithm for industrial parts detection.

PROJECT EXPERIENCE

A Light-weighted Transformer for Next Word Prediction

CMU, Pittsburgh, PA

Course Project

Spring 2024

- Trained on DailyDialog, achieved a test ppl of 35 and qualitative results comparable to GPT-2.

Improvement on Zero-Shot Text to Video Generation

CMU, Pittsburgh, PA

Course Project

Spring 2024

- Proposed LLM-based prompt elaboration + Few-shot learning for enhanced frame consistency on zero-shot video generation models, Achieving 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

Fall 2024

- Developed LLM-based instruction paraphrasing and instruction segmentation for original dataset.
- Introduced a weighted angular distance loss to improve navigation decision granularity.
- Achieved a success rate (SR) of 53.2% on unseen environments, outperforming strong baselines.

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”, *ICCV 2025, E2E3D Workshop*
 - 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”, *ICCV 2025*
 - **Chunjiang Liu**, Xiaoyuan Wang, Qingran Lin, Albert Xiao, Haoyu Chen, Shizheng Wen, Hao Zhang, Lu Qi, Ming-Hsuan Yang, Min Xu, Laszlo A. Jeni, Yizhou Zhao, “Multi-Object System Identification from Videos”, *ICLR 2026*
-