

EDUCATION

- **Shanghai Jiao Tong University** Shanghai, China
Bachelor of Engineering Sept 2020 - Current
 - **Overall GPA:** 92.80/100, 4.03/4.30 (Rank 4/88).
 - **4th semester GPA:** 95.24/100, 4.20/4.30 (**Rank 1/89**).
 - **Selected Courses:** Machine Learning (A+), Natural Language Process (A+), Deep Learning (A+), Reinforce Learning (A+), Data Mining (A+), Digital signal and image processing (A+), Design and Analysis of Algorithms (A+), Artificial Intelligence Problem Solving and Practice (A+), Linear and Convex Optimization (A+), Stochastic Processes (A+)
- **Massachusetts Institute of Technology** Cambridge, US
Visiting Student July 2023 - Jan 2024
- **Beijing National Day School** Beijing, China
High School Diploma, honored class of Physics Olympiad Sept 2014 - July 2020
 - The first prize at the 36th CPHO semi-finals, Beijing Division (Rank: 17/1000+, top 1%).

PUBLICATIONS

- **3D-LLM: Injecting 3D World into Large Language Model** (In submission)
Yining Hong, Haoyu Zhen, Peihao Chen, Shuhong Zheng, Yilun Du, Zhenfang Chen, Chuang Gan[†] MIT-IBM
 - Proposed to inject the 3D world into large language models, and introduce a whole new family of 3D-LLMs.
 - Our 3D-LLMs can take 3D point clouds and their features as input and perform a diverse set of 3D-related tasks, including captioning, dense captioning, 3D question answering, task decomposition, 3D grounding, 3D-assisted dialog, navigation, and so on.
- **Color-NeuS: Reconstructing Neural Implicit Surfaces with Color** (In submission)
Licheng Zhong, Lixin Yang, Kailin Li, Haoyu Zhen, Mei Han, Cewu Lu[†] MVIG
- **Relative Entropic Optimal Transport: a (Prior-aware) Matching Perspective to (Unbalanced) Classification** (In submission)
Liangliang Shi, Haoyu Zhen, Gu Zhang, Junchi Yan[†] SJTU-ReThinklab
 - Rethought classification from a matching perspective by studying the matching probability between samples and labels with optimal transport (OT) formulation.
 - Proposed a new variant of optimal transport, called Relative Entropic Optimal Transport (RE-OT), which guides the coupling solution to a known prior information matrix.
- **CHORD: Category-level in-Hand Object Reconstruction via Shape Deformation** ICCV 2023
Kailin Li, Lixin Yang*, Haoyu Zhen, Zenan Lin, Xinyu Zhan, Licheng Zhong, Jian Xu, Kejian Wu, Cewu Lu[†]* MVIG
 - Proposed a new method, CHORD, for Category-level in-Hand Object Reconstruction via shape Deformation.
 - Introduced a new dataset, COMIC, for Category-level hand-object reconstruction that features diverse Objects, Materials, Interactions and Camera-views.
- **Understanding and Generalizing Contrastive Learning from the Inverse Optimal Transport Perspective** ICML 2023
Liangliang Shi, Gu Zhang, Haoyu Zhen, Jintao Fan, Junchi Yan[†] SJTU-ReThinklab
 - Interpreted the contrastive learning from a collective point set matching perspective
 - Proposed a min-min optimization procedure for feature learning.

EXPERIENCE

- **Computational Cognitive Science Lab, MIT** Cambridge, US
Undergraduate researcher, supervised by Prof. Josh Tenenbaum and Prof. Chuang Gan. Mar 2023 - (Now)
 - 🔧 Embodied AI and 3D Reasoning
- **Machine Vision and Intelligence Group** Shanghai, China
Undergraduate researcher, supervised by Prof. Cewu Lu. Dec 2021 - (Now)
 - 🔧 Hand-Object Interaction, Object Understanding and 3D Mesh Reconstruction.
- **SJTU-ReThinklab** Shanghai, China
Undergraduate researcher, supervised by Prof. Junchi Yan. Sept 2022 - (Now)
 - ☰ Self-supervised Learning (Contrastive Learning) and Optimal Transport

PROJECTS

- **PyBlend: A Python Library for Blender** Aug 2023
Shanghai Jiao Tong University
 - Contribute to PyBlend: Demonstrate your dedication by actively contributing to PyBlend, a Python library designed to revolutionize Blender scripting. Empower fellow artists and developers to elevate their Blender workflows with a diverse range of dynamic functions effortlessly. [🔗GitHub](#).
- **Shanghai Jiao Tong University AI Pilot Class Website** Shanghai, China
Shanghai Jiao Tong University Jan 2022 - Apr 2022
 - Built a community and developed a website for the pilot class at Shanghai Jiao Tong University, where students can evaluate the quality of different courses and share learning materials. I was the primary contributor, completing over 70% of the work. The homepage can be accessed at [🔗Website](#) or [🔗GitHub](#).
- **GEFF (Gaze Estimation with the Fused Features)** Shanghai, China
AI2611 Machine Learning Course Project [🔗Code](#) [📄Report \(PDF\)](#) Jun 2022
- **NeRF4SeRe: Neural Radiance Fields for Scene Reconstruction** Shanghai, China
AI3604 Computer Vision Course Project [🔗Code](#) [🔗Slides & Results](#) Oct 2022 - Jan 2023
- **Could Spike Neural Networks Beat ANNs on Image Synthesis?** Shanghai China
AI3610 Brain-Inspired Intelligence Course Project [🔗Code](#) [📄Report \(PDF\)](#) Dec 2022

HONORS AND AWARDS

- 2021. Huawei Smart Base Scholarship (4000 ¥)
- 2021/2022. Academic Excellence Scholarship of SJTU (top 10%)
- 2019. The first prize of the 36th CPHO semi-finals, Beijing Division (Rank: 17, top 1%)

SKILLS SUMMARY

- **Proficient:** Python (PyTorch, NumPy, pandas, scikit-learn, etc.), C/C++, Linux, Shell (Bash/Zsh), L^AT_EX, Git, Blender
- **Familiar:** MATLAB, HTML/CSS, etc.