

Brandon Jinxiu Liu

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EDUCATION

- **South China University of Technology (SCUT), School of Future Technology** Guangdong, China
B.Eng, Majoring in AI; GPA: 3.71 Aug 2021 - Jun 2025
*Main Courses: Deep Learning and Computer Vision(4.0/4.0), Course Design of Deep Learning and Computer Vision (4.0/4.0, **Best project**), C++ Programming Foundations (4.0/4.0), Python Programming (4.0/4.0), Data Structure (4.0/4.0), Advanced Language Programming Training (4.0/4.0), Artificial Intelligence and 3D Vision (4.0/4.0), Calculus (4.0/4.0)*

RESEARCH INTERESTS

Vision and language Multi-modal Learning, Relation Modeling in Image Synthesis, LLM-enhanced Diffusion Model and Applications on 2D/3D AIGC

PUBLICATIONS

- **R3CD: Scene Graph to Image Generation with Relation-aware Compositional Contrastive Control Diffusion, AAAI 2024** (under review)
Jinxiu Liu, Qi Liu
- **Deep Neural Network Compression by Spatial-wise Low-rank Decomposition, Applied Intelligence** (under review)
Xiaoye Zhu*, **Jinxiu Liu***, Ye Liu, Michael Ngo, Zihan Ji (* equal contribution, JCR: Q2/ IF: 5.019)
- **Field-Uniform: Lighten Autonomous Driving Framework Using Spherical Harmonic Transform, ICASSP 2024** (under review)
Zixuan Chen, **Jinxiu Liu**, Xuxiao Wang, Lele Han, Qi Liu,

EXPERIENCE

- **Research Intern, SCUT, supervised by Prof. Qi Liu, Dec 2022 - Current**
 - Developed a novel scene graph to image generation framework based on **diffusion models** and **contrastive control mechanisms**. And addressed the challenges of abstract relations in scene graphs and generated images that matched the scene graph specifications.
 - Submitted a paper to AAAI 2024 (**First Author**, under review)
 - **After submission, i continue to explore the LLM-enhanced diffusion model and applications on 2D/3D AIGC.**
- **Course Design of Deep Learning , mentored by Prof. Mingkui Tan and Prof. Huiping Zhuang**
 - Developed a text-based dialogue system called MiniHuggingGPT, a mini multi-modal application like HuggingGPT and MiniGPT-4, which can leverage three large-scale models for image captioning, image generation, and text conversation using natural language commands by instruction finetuning.
 - Provided a web-based interface based on gradio for easy interaction with the system and showcased various examples of its capabilities
 - Awarded as the **Best Course Design (1/39)**.
- **Research Training Program, SCUT, work with Prof. Ye Liu and Prof. Michael Ng, Jun 2022 - Aug 2022**
 - Developed a new method for compressing convolutional neural networks based on spatial-wise low-rank decomposition and preserved the higher-order structure of the filter weights and exploited their local low-rankness in different spatial resolutions
 - Submitted a paper to Applied Intelligence (**Co-First-Author**, under review):

- *Fund project leader, SCUT, work with Prof. Ziqian Zeng, Sep 2022 - Dec 2022*
 - Participated in a research project on relation extraction based on few-shot learning and application in medical treatment, funded by **China Innovation and Entrepreneurship Training Program**.
 - Proposed a novel semi-supervised learning strategy for distant supervision denoising, using meta-learners, contrastive learning, and adaptive thresholding.
 - Applied the proposed methods to biomedical relation extraction tasks.

HONORS AND AWARDS

- The Taihu Innovation Scholarship (**ranked 1/160 comprehensively**, 8000, Wuxi city governments)
- TCL Corporate Scholarships (**ranked 1/25 comprehensively**, 20000, TCL Technology)
- SCUT Scholarship (**ranked 1/25 comprehensively**, 20000, SCUT)
- The Mathematical Contest in Modeling & The Interdisciplinary Contest in Modeling(MCM/ICM), **Meritorious Winner (Top 7% globally)**
- Asia and Pacific Mathematical Contest in Modeling (APMCM) – The Second Prize (Top 15% globally)