Jiajun Liu

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 JEdward | JEdward | JEdward

EDUCATION

• **Renmin University of China**   *2023.9 - present*
Bachelor's degree, Gaoling School of Artificial Intellengence   Beijing, China
  ◦ GPA: 3.84/4.00 (Rank 5 / 59), **ranked 1st** in the major in the **first and third semesters**.

• **Foshan No.1 High School**   *2020.9 - 2023.6*
High School Diploma, Key Class   Foshan, China
  ◦ Gaokao: 680, Top 0.001%

RESEARCH & PROJECT EXPERIENCES

• **Deep Generative Models: Comprehensive Implementation and Analysis**   Jan. 2025 - present
Advisor: Chongxuan Li

  ◦ Implemented 3 deep generative models (VAE, GAN, DDPM/DDIM), establishing a comprehensive comparative analysis framework to provide systematic solutions for distribution learning.

  ◦ Redesigned an accelerated sampling algorithm based on diffusion models, reducing the number of sampling steps in the DDIM generation process from 1000 to 50 while maintaining the quality of generating.

  ◦ Utilized visualization analysis tools to demonstrate the distribution characteristics of different generative models, revealing the differences among models in terms of mode coverage and sample diversity.

  ◦ Writed notes and shared the frontier knowledge in DGM based on the Course given by my mentor, including Flow Models, EBMs and some ideas used in the latest work LLaDA by our group, GSAI-ML.

• **WeaveWave: Towards Multimodal Music Generation**   Oct. 2024 - present
Advisor: Ruihua Song

  ◦ Helped build a multimodal music generation framework based on Meta's AudioCraft, implementing an end-to-end training pipeline for text-and-style-to-music generation with customizable configurations

  ◦ Architectural Innovation: Proposed three distinct architectural approaches for multimodal music generation

  ◦ Production-Ready Implementation: Created a functional web application demo using Gradio that showcases the multimodal music generation capabilities of WeaveWave

RESEARCH INTEREST

  ◦ **Reinforcement Learning:**
     Interact with the surrounding environment to achieve specific goals with different models.
  ◦ **Generative Models:**
     Generate spacial or temporal data with different models, especially 3D/4D generation.

Honors and Awards

- **The 49-th Internation Collegiate Programming Contest (ICPC) East-Asia Continent Final Contest Silver Medal** — Dec. 2024
  Top 30%, Awarded by ICPC Foundation

- **The 49-th Internation Collegiate Programming Contest (ICPC) Asia Continent Regional (Nanjing) Silver Medal** — Nov. 2024
  Top 30%, Awarded by ICPC Foundation

- **2024 CCF Collegiate Computer Systems & Programming Contest Silver Medal** — Oct. 2024
  Awarded by China Computer Federation

- **2024 Meta Hacker Cup Human track** — Oct. 2024
  Ranked 589 Globally, Awarded by Meta

- **The 15-th "Lanqiao Cup" National Software and Information Technology Professional Talent Competition, National Second Prize** — Jun. 2024
  Awarded by Ministry of Industry and Information Technology

- **2024 Academic Excellence Scholarship** — Dec. 2024
  Awarded by Renmin University of China

- **Merit Student Award** — Dec. 2024
  Awarded by Renmin University of China

- **Chinese Physics Olympiad for High School Students (CPhO) National Second Prize** — Oct. 2021
  Awarded by Chinese Physics Olympiad Committee

Skills & Expertise

- **Language Proficiency:** Mandarin(Native), English(CET-6 Test Score: 596, Top 1% in China)
- **Platform:** Linux, Windows
- **Programming Languages:** C/C++, Pythons
- **Research Skills:** Pytorch, Transformer, Markdown/LaTex, Reinforcement Learning, Gradio
- **Professional Courses:** Data Structure(4.0 / 4.0), Python and Artificial Intelligence(4.0 / 4.0), Probability Theory and Mathematical Statistics(4.0 / 4.0), Mathematics for Machine Learning(4.0 / 4.0)

Services & Presentations

- **Vice-captain of the School ACM-ICPC Team** — Present
  Appointed by Infomation School of RUC

- **Talk: "Intelligent Programming: The New Paradigm of Programming in the AI Era"** — 2025.2
  Invited by Student Union & Gaoling School of Artificial Intelligence

- **Talk: "Algorithm and Artificial Intellengence"** — 2025.3
  Invited by Infomation School of RUC

- **Video: "My Experience Using AI+ Tools to Create Videos"** — 2024.10
  Invited by China Computer Federation