Zhicheng Jiang

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Education

- **MIT** — Cambridge, MA
  Undergraduate, Computer Science and Mathematics (Double Major) — *Sep 2024 – Present*
  Selected Coursework: Deep Generative Models; Quantitative Methods for NLP; Representation, Inference and Reasoning in AI; GPA:5.0/5.0

- **Tsinghua University** — Beijing, China
  Preparatory Program, Institute of Interdisciplinary Information Science (IIIS, Yao Class) — *Sep 2023 – Jun 2024.*
  Selected Coursework: Advanced Calculus; Linear Algebra; Abstract Algebra; Algorithm Design; Introduction to Computer Systems; Introduction to LLM Applications; Deep Learning; Exploration to Scientific Research of Lab; GPA:4.00/4.00

Skills

- **Programming: Python(Jax/Pytorch for Deep Learning Models), C, C++**
- **Language: English(proficient), Chinese(native)**

Experience

- **Internship in Automatic Theorem Prover** — ByteDance Seed
  ByteDance AI4Math Team — *Jul 2025 -Present*
  Internship on automatic theorem provers using AI methods. Developed the algorithm for Seed-Prover, which is an automatic agentic system for proving olympiad-level math problems. It acheived a silver medal in IMO2025 and had the SOTA performance on PutnamBench and other hard math datasets.

- **Undergraduate Reasearch in Deep Generative Models** — MIT
  Supervised by Kaiming He — *Sep 2024 -Present*
  Research on deep generative models in computer vision, especially diffusion models and flow matching models, and investigate the underlying principles of denoising-based models, and develop new models on TPU machines using Jax.

- **Undergraduate Research in Technical Computer Science** — Tsinghua University
  Supervised by William Kuszmaul — *Feb 2024 -Present*
  Research on the theoretical analysis of randomized data structures. Developed a new time complexity bound and design an algorithm for a general framework of a randomized problem. Developed a paper to be submitted to PODS/ITCS. (Joint first author)

Awards

- **Gold Medal** — 2023
  64th International Mathematics Olympiad(IMO)

- **First Prize** — 2021
  National Olympiad in Informatics in Provinces(NOIP)

Projects

- **Video Style Transfer(Deep Learning Course Project)** — Feb 2024 - June 2024
  Python, Deep Learning
  An automatic pipeline to do image style transfer by user-specified prompts using ControlNet and frame interpolation.

- **Speeding Up Diffusion Models with One-step Generators** — Sep 2024 - Dec 2024
  Python, Deep Learning, Generative Models, Diffusion Models, VAE
  In the project, we proposed a new method to speed up the training of diffusion models by using one-step generators. On toy experiments, this reduces NFE by half while maintaining the sample quality. We also wrote a blog post, explaining the motivation of the experiment from a higher perspective.

- **Knowledge Database** — Feb 2024 - Jun 2024
  Python, LLM, Bash, Makefile
  In the project, we apply LLMs to answer user questions given a folder containing documents as the context. We developed a tagging system, which make the search efficient even when the number of documents is large. We also support semantic search for multimodal documents, such as images and videos.

- **Auto GCP TPU Management** Apr 2025
  Python, TPU, GCP, Job Management

  An automatic job manager for Google Cloud Computing(GCP) development in TPUs. Including automatic enviroment solver, reapplying resuming jobs that use a preemptible TPU which has been preempted, etc.

Publications

- **Is Noise Conditioning Necessary for Denoising Generative Models?** ICML 2025
  Zhicheng Jiang, Qiao Sun*, Hanhong Zhao*, Kaiming He*

- **Seed-Prover: Deep and Broad Reasoning for Automated Theorem Proving**
  ByteDance Seed AI4Math