TIANJUN YUAN

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EDUCATION

Duke University & Duke Kunshan University (Dual Degree) *Class of 2026*
B.S. in Interdisciplinary Studies; Computational Science; Applied Math (Duke) Durham, USA
B.S. in Computational Science, Applied Math Track (DKU) Suzhou, China

- GPA: 3.71/4.00; Dean's List: Fall 2022, Spring 2023, Fall 2023, Spring 2024
- Selected Coursework: NLP (Graduate Course, A), Advanced Computer Architecture II (Graduate Course), Advanced Algorithm (A+), Advanced Linear Algebra (A+), Math of ML (A), Computer Organization (A).

RESEARCH INTERESTS

I am broadly interested in **systems for machine learning (MLSys)**. I am also doing researches on **Distributed Learning in Real-World Systems** (on-device/collaborative settings) and **LLM-Assisted Proof & Correctness** in system verification.

A background in Olympiad programming trained me to design elegant, resource-aware algorithms; I am also deepening my systems coding skills to build core ML infrastructure components through ongoing projects.

RESEARCH EXPERIENCE

Duke University *Dec 2024 – Present*
Advised by Prof. Danyang Zhuo

- **Ongoing — LLM for Verification** (co-advised by Prof. Matthew Lentz and Prof. Danfeng Zhang):
  - Designed an LLM-assisted pipeline for Coq/OCaml that proposes tactic plans, with failure-aware search to recover from tactic exceptions in CompCert systems verification.
- **ML Systems Simulation**:
  - Contributed to a GPU cluster simulator that maximizes frameworks' code reuse *(Accepted in NSDI 2026)*.
  - Extending the simulator to model other ML (training / inference) pipelines.

Duke Kunshan University *Sep 2023 – Nov 2024*
Advised by Prof. Bing Luo & Prof. Xianhao Chen (HKU)

- **Personalized Split Federated Learning**: Built personalized split/federated pipelines for on-device fine-tuning of foundation models via knowledge distillation, targeting low-latency, privacy-preserving adaptation *(First author MobiCom '26 submission)*.
- **Cooperation System**: Designed and implemented Multi-agent system code. *(EMNLP '25 submission)*

PUBLICATIONS AND MANUSCRIPTS

- *Phantora: Maximizing Code Reuse in Simulation-based Machine Learning System Performance Estimation.*
  Jianxing Qin, Jingrong Chen, Xinhao Kong, Yongji Wu, **Tianjun Yuan**, Liang Luo, Zhaodong Wang, Ying Zhang, Tingjun Chen, Alvin R. Lebeck, Danyang Zhuo.
  *Accepted in **NSDI 2026**.*

- *Adaptive Personalized Split Federated Learning for On-Device Fine-tuning of Foundation Models.*
  Tianjun Yuan, Jiaxiang Geng, Pengchao Han, Xianhao Chen, Bing Luo.
  *Submitted to **MobiCom 2026**.*

- *Cognitive Insights and Stable Coalition Matching for Fostering Multi-Agent Cooperation.*
  Jiaqi Shao, **Tianjun Yuan**, Tao Lin, Xuanyu Cao, Bing Luo.
  *Submitted to **EMNLP 2025**.*

AWARDS AND SCHOLARSHIPS

- **National Inspirational Scholarship** Oct 2024
  Awarded to the top 9 students across the university for outstanding academic performance.
- **DKU Summer Research Scholar (SRS)** Jun 2024

Olympiad Programming Contest

- **ACM-ICPC East-Asia Regional Contest**: 3× Gold Medal; Best rank: 20/452 regionwide 2022/2023
- **Asia-Pacific Informatics Olympiad (APIO)**: Gold Medal Aug 2020
- **Chinese National Olympiad in Informatics (NOI)**: Silver Medal Aug 2020
- **Tsinghua University Informatics Winter Camp**: Second Prize Dec 2019

LEADERSHIP & WORK EXPERIENCE

Teaching Assistant *Jan 2023 – Mar 2023; Aug 2023 – Oct 2023*
COMPSCI 201 (Introduction to Programming and Data Structures)

- Led weekly recitation sessions;
- Held office hours to support students on course materials and assignments.

Founder & President, Programming Contest Club *Dec 2022 – Jun 2023*

- Organized regular trainings, and led the club members to win 7 medals in ACM-ICPC.
- The club received 2023 DKU Academic Student Organization of the Year Award.

SKILLS

Programming Tools	Python, C, OCaml, PyTorch, Rust, LaTeX
Languages	English (fluent), Mandarin/Shanghainese (native)
Other	5-dan in Go (Weiqi)