

## Research Interests

Applied Mathematics, Data Mining, High-Dimensional Vector Search, Machine Learning Systems, LLM, AI

## Education

2022–Present **B.S. in Mathematics**, *University of Washington*, Seattle, WA  
Coursework includes: Real & Complex Analysis, Abstract Algebra, Topology & Geometry, Probability, Data Science, and Machine Learning.

## Publications

- ICDM 2025 **Jiuzhou Fu**, Luanzheng Guo, Nathan Tallent, Dongfang Zhao. *ProHD: Projection-Based Hausdorff Distance Approximation*. Accepted at **IEEE International Conference on Data Mining (ICDM) 2025** (top-tier data mining conference, 13% acceptance rate.)[link](#)
- Under Review **Jiuzhou Fu**, Dongfang Zhao. *MPAD: A New Dimension-Reduction Method for Preserving Nearest Neighbors in High-Dimensional Vector Search*. Under review at **Web Search and Data Mining (WSDM) 2026**.[link](#)
- Preprint **Jiuzhou Fu**, Dongfang Zhao. *Reordering and Compression for Directed Hypergraph Processing*. [arxiv.com](#).[link](#)

## Research Experience

- Nov 2024 – Present **Undergraduate Researcher**  
**High-Performance Data-Intelligence Computing (HPDIC) Lab**, *University of Washington*, Seattle, WA, Supervisor: Prof. Dongfang Zhao
- Collaborated with scientists at Pacific Northwest National Laboratory (PNNL) on optimizing the calculation of Hausdorff distance. Work supported by the U.S. Department of Energy (DOE), Pacific Northwest National Laboratory (PNNL), and National Science Foundation (NSF). The published paper was presented in Washington D.C. in ICDM 2025.
  - Conducted a series of research with the supervisor and PNNL on order-preserving dimensionality reduction, directed hypergraph compression and reordering, and fully homomorphic encryption.
- Dec 2023 – Dec 2024 **Undergraduate Researcher**  
**Washington Experimental Mathematics Lab (WXML)**, *University of Washington*, Seattle, WA, Faculty: Dr. Hadrian Quan, Dr. Andrea Ottolini
- Project on applications of concentration of measure, employing advanced probability and statistical techniques.
  - Collaborated with a 6-member interdisciplinary team including two faculty members.[link](#)

## Internship Experience

- Jun – Aug 2025 **Prompt Engineer Intern, MaaS Department**, *Z.AI*, Beijing, China
- Worked on REDNOTE (Xiaohongshu overseas version) AI translation systems.
  - Designed prompt engineering workflows, instruction fine-tuning, and evaluation for in-house LLMs (GLM-4, GLM-4.5, CogTTS).

May – Aug **Data Science Intern, Real AI**, Beijing, China

- 2024 ○ Process unstructured records into structured data using pandas and SQL. Including data cleaning, conflict detection, and quality assurance.
- Designed multi-turn prompt engineering pipelines for a policy-advising LLM.

Aug – Oct **Cybersecurity Intern, QAX (Qi An Xin Group)**, Beijing, China

- 2024 ○ Participated in large-scale red-blue exercises on Blue Team surveillance and incident response.
- Monitored server/web traffic using QAX-developed security platforms.