

CHUNHUI CHEN

Beijing, China, 786463397@qq.com

PROFILE

I'm a third-year Ph.D. student from Department of Mathematical Sciences, Tsinghua University and I work with Professor Hao Wu as a member of the THMIL lab. My research interest includes numerical computation for optimization like optimal transport, statistics for finance and machine learning, and I also have several internships in the Internet as well as in the Quant industry.

EDUCATION

Sep 2017 — Jun 2021

Bachelor of Engineering, Tsinghua University

Major - Engineering Mechanics (Tsien Excellence in Engineering Program)

GPA: 3.82/4.00

- Main courses: Advanced Calculus (I) (II) (95+), Advanced Algebra and Geometry (I) (II) (95+), Probability Theory and Mathematical Statistics (100), Methods of Mathematical Physics (100), Fundamentals of Science and Engineering Calculation (95+), Thermodynamics and Statistical Physics (95+), Fundamentals of Solid State Mechanics (95+), Fluid Mechanics (90+), Quantum Mechanics (95+)

Minor - Statistics

GPA: 3.98/4.00

- Main Courses: Elementary Probability Theory (95+), Statistical Inference (95+), Multivariate Statistics (95+), Linear Regression Analysis (95+), Statistical Computing (95+), Financial Statistics (95+)

Awards

- Tsinghua University Xuetao Scholarship, Tsinghua University Comprehensive Scholarship, Tsinghua University Academic Excellence Scholarship, Tsinghua Friendship -Toyota Scholarship, Tsinghua University Qingshan Fan Material Mechanics Scholarship
- Honours degrees in TEEP
- Tsinghua University Excellent Graduate Award

Jan 2019 — Feb 2019

Winter Session, Homerton College, Cambridge University

- Main courses: English Module and Global Leadership Module (A+ marks)

Sep 2021 — Present

Ph.D. candidate, Department of Mathematical Sciences, Tsinghua University

Awards

- 2022 Second prize of Outstanding Teaching Assistant
- 2023 Best prize of Outstanding Teaching Assistant

SKILLS

R / Python

Highly Motivated

Machine learning

Optimal transport

Information theory

Image compression

Independent research

Quantitative finance

Short-term alpha research

Long-term alpha research

INTERNSHIPS

Feb 2019 — Feb 2020

Technical Research Engineer (Intern), Theory Lab, 2012 Labs, Huawei Technologies Co., Ltd.

- Using neural network technology, combined with scientific ideas from Statistics, Optimization Theory, Time Series Analysis, etc., to model MIMO communication architecture through neural networks, greatly improving the transmission efficiency of signals;
- First author publication in a conference in the field of Communication.

Dec 2022 — Dec 2023

Technical Research Engineer (Intern), Theory Lab, 2012 Labs, Huawei Technologies Co., Ltd.

- Starting from the perspective of mathematical modeling, using the Wasserstein Barycenter problem in Optimal Transport, the rate-distortion-perception function is solved and its properties are analyzed, breaking through the limitations of only being able to simulate this function through data-driven methods in the past;
- First author accepted at a top conference in Information Theory;
- Solved practical application problems that the company cares about, and receive Huawei Spark Award.

Mar 2023 — Dec 2023

Quant Research Consultant, WorldQuant, LLC.

- Champion at International Quant Championship 2023 in China Final, successfully submitted 200+ alpha both in China and US markets with fundamental, technical, sentimental, news and options data.

Jan 2024 — May 2024

Quant Research Intern, Lingjun Investment, LLP.

- Through mathematical and statistical modeling, I focus on researching and exploring the alpha factors of China's A-share market under different frequencies, constructing corresponding trading strategies for different information fields such as volume, fundamentals, and alternative data, and establishing an efficient evaluation system.

Jun 2024 — Aug 2024

Quant Research Intern, JQ Investments

- Focus on exploring short-term alpha construction and execution improvement.

PUBLICATION

1. TC-MIMONet: A Learning-based Transceiver for MIMO Systems with Temporal Correlations, **C Chen**, Z Wang, Y Mao, H Wu, B Bai, G Zhang 2021 IEEE 93rd Vehicular Technology Conference (VTC2021-Spring), 1-6
2. Computation of Rate-Distortion-Perception Functions With Wasserstein Barycenter, **C Chen**, X Niu, W Ye, S Wu, B Bai, W Chen, SJ Lin, 2023 IEEE International Symposium on Information Theory (ISIT), 1074-1079
3. A numerical algorithm with linear complexity for Multi-marginal Optimal Transport with L^1 Cost, **C Chen**, J Chen, B Luo, S Jin, H Wu, arXiv preprint arXiv:2405.19246 (Submitted to CSIAM TRANSACTIONS ON APPLIED MATHEMATICS)
4. Computation and Critical Transitions of Rate-Distortion-Perception Functions With Wasserstein Barycenter, **C Chen**, X Niu, W Ye, H Wu, B Bai, arXiv preprint arXiv:2404.04681 (Submitted to IEEE TIT)