

# Jiayi Lian 连佳宜

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🏠 Zhejiang University

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## 🎓 EDUCATION

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### Zhejiang University

Sept 2021 - Present

PH.D. Student, Computer Science and Technology

- **Advisors:** [Guochuan Zhang](#)
- **Research Area:** Theoretical Computer Science

### Zhejiang University

Sept 2017 - July 2021

B.S., Computer Science and Technology, Chu Kochen Honors College

- **GPA:** 3.90/4.0; **Rank:** 7/44

## 🏆 SELECTED AWARDS AND SCHOLARSHIPS

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- 2022 **Award of Honor for Graduate, Zhejiang University**
- 2019 **First-Class Scholarship for Outstanding Students, Zhejiang University**
- 2018 **Zhejiang Provincial Government Scholarship**
- 2018 **First Prize in the 10th National Mathematics Competition for College Students**

## 📄 PUBLICATIONS

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- Lin Chen, **Jiayi Lian**, Yuchen Mao, and Guochuan Zhang. A Nearly Quadratic-Time FPTAS for Knapsack. In Proceedings of the 56th ACM Symposium on Theory of Computing (**STOC 2024**), to appear.
- Lin Chen, **Jiayi Lian**, Yuchen Mao, and Guochuan Zhang. Approximating partition in near-linear time. In Proceedings of the 56th ACM Symposium on Theory of Computing (**STOC 2024**), to appear.
- Lin Chen, **Jiayi Lian**, Yuchen Mao, and Guochuan Zhang. Faster algorithms for bounded knapsack and bounded subset sum via fine-grained proximity results. In Proceedings of the 2024 Annual ACM-SIAM Symposium on Discrete Algorithms (**SODA 2024**).

## 🔍 RESEARCH EXPERIENCE

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### Equally-Split Bin Packing Problem Algorithm in Resource Allocation July 2023 - Dec 2023

Instructor: Guochuan Zhang. Collaborated with Alipay

- Showed that the Equally-Split Bin Packing Problem problem is NP-hard and proposed an  $\frac{e}{e-1}$ -approximation algorithm.
- Gave two heuristic frameworks and conducted experiments using an open dataset from Alibaba Trace.

### Maximally Redundant Trees Algorithm for Communication Networks Dec 2020 - July 2021

Instructor: Guochuan Zhang. Collaborated with Huawei

- Showed that the 3-Maximally Redundant Trees Problem is NP-hard and proposed a 2-approximation algorithm.
- Received recognition as outstanding undergraduate graduation thesis of Zhejiang University.

## ☰ OTHER EXPERIENCES

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### Presentation at the 9th Graduate Student Forum

Nov 2023

Mathematical Programming Branch of the Chinese Operations Research Society

- Topic: Knapsack with Small Items.

### Participate in Huawei Software Elite Challenge

Mar 2022 - Apr 2022

Huawei Hangzhou Research Center, with teammates Yichao Duan, Yangyi Huang

- Designed an algorithm for demand allocation in communication networks by binary search and greedy search.
- Won the second-class prize in the Hangzhou-Xiamen Huawei Software Elite Challenge Competition.

### Teaching Assistant Experience

College of Computer Science and Technology, Zhejiang University

- Theory of Computation (Instructor: Yuchen Mao) 1st Term of 2020, 2021, 2023
- Introduction to Applied Operations Research (Instructor: Guochuan Zhang) 1st Term of 2022
- Advanced Data Structure & Algorithm Analysis (Instructor: Yuchen Mao) 2nd Term of 2021
- Algorithm Design & Analysis (Instructor: Francis Chin) 2nd Term of 2020