ZIYANG MEN

EDUCATION

University of California, Riverside	Sep. 2022 - Now
Ph.D. in Computer Science	
University of Copenhagen	Sep. 2020 - Jul. 2022
M.Sc. in Computer Science	
University of Electronic Science and Technology of China	Sep. 2016 - Jun. 2020
University of Glasgow (Dual degree)	Sep. 2016 - Jun. 2020
B.En. in Electronics and Electrical Engineering.	

SKILLS

Programming Languages

- High-performance programming: C/C++.
- Data analysis: Python, R, Bash.

Technique Strength

- Parallel algorithm and data structure, parallel computing, performance engineering.
- Spatial indexes, Nearest neighbor search, ILP/MIP, SAT.

Areas of Interest:

- LLM, machine learning theory, generative model.
- Data analysis, database and system.

PUBLICATION

- <u>Men, Ziyang</u>, Zheqi Shen, Yan Gu, Yihan Sun. "Pkd-tree: Parallel kd-tree with Batch Updates". *International Conference on Management of Data (SIGMOD)*, 2025.
- Gu, Yan, Ziyang Men, Zheqi Shen, Yihan Sun, and Zijin Wan. "Parallel Longest Increasing Subsequence and van Emde Boas Trees." In *Proceedings of the 35th ACM Symposium on Parallelism in Algorithms and Architectures (SPAA)*, pp. 327-340. 2023.
- Ma, Mengfan, Ziyang Men, André Rossi, Yi Zhou, and Mingyu Xiao. "A vertex-separator-based integer linear programming formulation for the partitioned Steiner tree problem." Computers & Operations Research (COR) 153 (2023): 106151.
- <u>Men, Ziyang</u>. "Leveraging cutting planes reasoning for faster Pseudo-Boolean solving and optimization." Master diss., Department of Computer Science, University of Copenhagen.

RESEARCH EXPERIENCE

- Developed a parallel implementation of the kd-tree, achieving significant performance improvements over baselines. Features include parallel tree construction, batch updates, and efficient queries.
- Derived the first work-efficient parallel batch update algorithm for the Van Emde Boas tree.
- Designed and implemented an efficient Integer linear programming (ILP) formulation for the Steiner multigraph problem, leveraging SCC and Min-cut as separation callbacks.
- Conducted theoretical and experimental research on preprocessing techniques for SAT and 0-1 ILP, showing preprocessing accelerates solving many instances but has limitations for harder cases.

SERVICE

Academia Services

- · Artifact Evaluation Committee: PPoPP' 25.
- · Sub-reviewer: ALENEX' 24, Euro-PAR' 24, SEA' 23.

Teaching Assistant

Department of Computer Science and Engineering	UCR, U.S.A
\cdot CS141 Intermediate Data Structure and Algorithms	Fall 2024
\cdot CS218 Design and Analysis of Algorithms	Spring 2024
\cdot CS141 Intermediate Data Structure and Algorithms	Winter 2024
· CS219 Advanced Algorithms	Fall 2023
Instructor	

Department of Computer Science	UCPH, Denmark
· NDAK15007U Machine Learning	Block 2, 2022
· NDAA09023U Advanced Algorithms and Data Structures	Block 1, 2021

HONORS AND AWARDS

Graduate Student Association Travel Grand, UCR	2023
Dean's Distinguished Fellowship, UCR	2022
National Encouragement Scholarship, MoE (China) & UESTC	2019
National Encouragement Scholarship, MoE (China) & UESTC	2018
First Prize for National College Students' Innovation Training Program, UESTC	2018
Outstanding Individual of Student Association, UESTC	2017

LEADERSHIP & INVOLVEMENT

University Modern Chinese Orchestra	Mar. 2018 - Jun. 2020
Lead Alto-Erhu player	USETC, China
Sri Lanka Orphan Care Program	Jun. 8th - 22rd, 2017
Team Leader	Nuwaraeliya, Sri Lanka
Chengdu International Marathon	Sep. 23rd, 2017
Ranked 10th by age group (19-21)	Chengdu, China
Students' Representative Council	Sep. 2016 - Jun. 2022
Student Representative	UoG, Scotland