

# Ziqian Zhong

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## Education

2020/08 – present  
Cambridge, MA      **Candidate for B.S. in Computer Science and Mathematics, Massachusetts Institute of Technology**  
GPA: 5.0/5.0  
Selected Coursework: Computation Structures (A+), Elements of Software Construction (A+), Advanced Data Structure (A+), Advanced Complexity Theory (A), Quantitative Methods for Natural Language Processing (A), Machine Learning (A), Fundamentals of Statistics (A), Combinatorial Theory (A)

## Experiences

2023/05 – 2023/08  
New York, NY      **Algo Developer Intern, Hudson River Trading**  
The role is similar to quantitative researcher in other quant trading firms. Conducted both market and algorithmic research.

2022/06 – 2022/08  
New York, NY      **Machine Learning and Data Science Intern, Better Off Brunching**  
Designed and refined algorithms to optimize brunching experiences. Performed experiments and analysis on real-life data.

2021/10 – present  
Cambridge, MA      **Undergraduate Researcher, Massachusetts Institute of Technology**  
Took part in both theoretical computer science and deep learning research. Worked with professor Virginia Williams, Neil Thompson, and Jacob Andreas.

## Skills

Software Engineering	Machine Learning	Algorithm & Data Structure
C++ / Python / React / Vue / Node.js	Data Science / Statistics / Deep Learning	Research / Graduate Level

## Selected Awards

2019/08      **Gold Medal, Fourth Place, International Olympiad in Informatics 2019**  
Most prestigious computer science olympiad for secondary school students. 4th place representing China.

2022/05      **First Place, ICPC North America Championship 2022**  
Secured first place by a large margin among top teams as a member of the MIT ICPC team.

2022/06      **Honorable Mention, Alibaba Global Mathematics Competition 2022**  
Ranked top 100 in the international math competition with over 55k participants.

2022/01      **Second Place, Weblab 2022**  
An annual one-month web development hackathon in MIT. Second place among 120 teams.

2021/09      **Second Place, HackMIT 2021**  
An annual 24-hour hackathon. Second place among 180 teams as main frontend developer.

## Selected Publications

2023/06      **The Clock and the Pizza: Two Stories in Mechanistic Explanation of Neural Networks,**  
Ziqian Zhong\*, Ziming Liu\*, Max Tegmark, Jacob Andreas; *Under Review* ☑

2022/02      **On Problems Related to Unbounded SubsetSum: A Unified Combinatorial Approach,**  
Mingyang Deng\*, Xiao Mao\*, Ziqian Zhong\*; *SODA 2023* ☑

2022/07      **New Additive Approximations for Shortest Paths and Cycles,**  
Mingyang Deng\*, Yael Kirkpatrick\*, Victor Rong\*, Virginia Vassilevska Williams\*, Ziqian Zhong\*; *ICALP 2022* ☑

## Selected Projects

2022/07      **CP Ideas, <https://fjzzq2002.github.io/cpideas/>** ☑  
A tool that generates competitive programming problems with deep learning. Past problems are cleaned as training data for fine-tuning GPT-3. Around 1k users tried the tool and positive feedback is received.

2022/01      **Mosaic Detective, <https://mosaic-detective.com>** ☑  
A web game designed and implemented for Weblab 2022 in which players guess the words behind the blurry images. Implemented multi-player matches, rating system, matching system, ranking system.