# Ziyi Cai | Curriculum Vitae

Shanghai Jiao Tong University 800 Dongchuan Road – 200240 Shanghai P.R. China

# Information

**Description**: I am an undergraduate student in ACM Honor class, Zhiyuan college, Shanghai Jiao Tong University. I am broadly interested in theoretical computer science, especially in machine learning, computational complexity and logic.

#### **Education**

### Shanghai Jiao Tong University

Shanghai

B.S. in Engineering in Computer Science

Sept 2019 -present

O Average Score: 88.1 / 100

GPA: 3.73 / 4.0Ranking: 11 / 30

# **Experience**

Research

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University of Southern California

Research Intern advised by Prof. Jiapeng Zhang

Feb 2022 -present

Research Topic: spectral methods, PCA

I am now working on foundations of machine learning algorithm. Specifically, I am trying to analyse the performance of classic spectral clustering algorithm under general or advanced settings.

#### Shanghai Jiao Tong University

**BASICS Lab** 

Undergraduate Researcher advised by Prof. Yijia Chen

Aug 2021 -present

Research Topic: logic and games, parameterized complexity

I am now working on algorithmic meta-theorems. Specifically, I am trying to reveal the underlying logic connection between efficiently tractable problems and extend the tractability to more general cases. I mainly focus on parity game over specific classes of graphs and the resolution size of SAT.

Vocational

#### **Shanghai Jiao Tong University**

Teaching Assistant of Great Ideas in Computer Science

Sept 2022-Jan 2023

I prepared and gave several lectures on introduction of computational complexity for juniors at ACM Honor Class.

#### Shanghai Jiao Tong University

Teaching Assistant of Probability and Computing

Jun 2022-July 2022

#### **Shanghai Jiao Tong University**

Teaching Assistant of Mathematical Logic

Sept 2021-Jan 2022

#### Shanghai Jiao Tong University

Teaching Assistant of Programming

Sept 2020-Jan 2021

I led a TA team, and I was deeply involved in the course design.

I'm one of seven initiators and once a maintainer of an  $\underline{\text{online-judge system}}$  for not only ACM Honor Class but also other courses in the whole university.

# **Honors and Awards**

## Huawei Fellowship

14 winners at Zhiyuan College each year

2021

# **Zhiyuan Honors Scholarship**

Top 5% in SJTU each year

2019, 2020, 2021

## Silver Medal

The 35th China National Olympiad in Informatics (NOI)

2018

# Skills

O Programming: C++, Python, Latex, Git

O Language: Mandarin Chinese (native), Cantonese (native), English