

# ZONGHAN YANG

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## EDUCATION

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**Shanghai Jiao Tong University** 2022 – Expected 2027

*Ph.D. student at the Department of Computer Science and Engineering*

- Under the supervision of **Prof. Yuhao Zhang**

**Shanghai Jiao Tong University** 2018 – 2022

*Bachelor of Engineering in Computer Science and Technology*

- ACM Honors Class
- Zhiyuan Honor Degree of Bachelor (Top 1%)
- GPA: 3.77 / 4.3

## RESEARCH INTERESTS

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I have broad interests in computer science, especially on designing efficient algorithms and systems both theoretically and practically. I am recently working on online algorithms.

## RESEARCH EXPERIENCE

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**ITCS, Shanghai University of Finance and Economics** August 2020 – July 2021

*Undergraduate researcher advised by Prof. Pinyan Lu*

- Investigated topics on online scheduling with predictions. Understood and proved some current best bounds on several settings.

**John Hopcroft Center, Shanghai Jiao Tong University** September 2021 – August 2022

*Undergraduate researcher advised by Prof. Yuhao Zhang*

- Made progress on the open problems of online scheduling to minimize calibrations.

## TEACHING EXPERIENCE

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### Teaching Assistant

- Computer Architecture Fall 2020
- Operating System Spring 2021
- Compiler Design and Implementation Spring 2021
- Algorithm Design and Analysis (IEEE Pivot Class) Fall 2021
- Algorithm Design and Analysis (ACM Honors Class) Spring 2022
- Algorithm Design and Analysis (AI Pivot Class) Fall 2022

## SELECTED HONORS AND AWARDS

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### Competitive Programming Competitions

- International Collegiate Programming Contest (ICPC)  
*ICPC Dhaka World Finalist* Season 2020-2021
- Champion, Macau Regional* 2022
- Gold Medal (4th), Shenyang Regional* 2021
- Gold Medal (4th), Yinchuan Regional* 2021
- Gold Medal (4th), Danang Regional* 2019
- Gold Medal, Asia East Continent Final* 2018, 2019, 2021, 2022

- China Collegiate Programming Contest (CCPC)
  - Gold Medal (3rd), Guangzhou Site* 2021
  - Gold Medal (2nd), Shanghai City Championship* 2021
  - Gold Medal, Xiamen Site* 2019
- KDD CUP
  - Top 20 Finalist, City Brain Challenge* 2021
- Huawei Software Elite Challenge
  - Champion* 2020
- Asia-Pacific Informatics Olympiad (APIO)
  - Gold Medal* 2017
- National Olympiad in Informatics (NOI)
  - Silver Medal* 2017

## Scholarships

- Excellent Undergraduate Scholarship, Level A (Top 1%) 2020
- Zhiyuan Honors Scholarship 2018-2022

## SELETED PROJECTS

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### 🔗 Ornn - Toy Compiler in Java 2020

- Compile from Mx\* (a C-like toy language with simple classes) to RISC-V assembly via LLVM IR
- Featured in optimization passes: surpass GCC O2 on the (biased) test set
  - I fixed the test set one year later as TA, it then only over-performed GCC O1.
- A C-preprocessor in C++ (🔗 Call of the forge god) was written as the bonus part of the compiler project

### 🔗 PipyV - Toy CPU in Verilog 2020

- A 5-stage pipeline CPU supporting part of RV32I instruction set with branch prediction and caches
- Able to run on FPGA at 210 MHz

### 🔗 Mixaptcha - Toy CAPTCHA method 2021

- Project for the Computer Vision course
- The CAPTCHA requires users to distinguish between single images and mixtures of two
- A filtering algorithm was implemented to generate proper test set

### 🔗 NoGo Bot 2018

- A bot to play the game NoGo board game for the Programming course
- Implemented a hybrid algorithm including Alpha-Beta search and UCT

## SKILLS

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- **Languages** Chinese: Native, English: Fluent, Japanese: Very Basic
- **Programming languages** C, C++, Java, Python, JavaScript,  $\LaTeX$