

# Yiyuan Yang (杨毅远)

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## Basic Information

Gender: Male

Date of birth: January 1997

Native place: Hebei, China

## Education

### Huazhong University of Science and Technology

2015.9-2019.6

School of Artificial Intelligence and Automation, Bachelor, Science and Engineering Cross-Innovation Experimental Class

- GPA: 90.72 / 100; ranking 4% (top10); 95+ in basic mathematics; Monitor of the experimental class
- National Inspirational Scholarship (2018) Outstanding Graduate of the University (2019) Outstanding Individual in Innovative and Entrepreneurial Activities of the University (2017)
- Major courses: mathematical analysis, linear algebra, probability theory, operations research, data structure, principles of computer composition, artificial intelligence, principles of automatic control, computer networks
- **Recommended postgraduate to Department of automation, Tsinghua University (2018)**
- **Obtained the support to participate in the "AI project of Cambridge University" and served as the project leader (2019)**

### Tsinghua University

2019.9-

Department of Automation, Master, Research interesting: Artificial intelligence algorithm in industrial process and inspection.

- GPA: 3.98/4.0 (Top1) 90% of courses with perfect grades and 70% of courses with A's and above
- Tsinghua University School-level Comprehensive Second Class Scholarship (2020)

## Research Experience

### Intelligent Robot and Intelligent System Simulation Laboratory, HUST

2016.12-2018.12

Member, Captain of Smart Fleet Section under the Lab

- Ultrasonic module, energy-saving car model, RFID dormitory automatic door lock, c#.net Bluetooth serial port assistant, C# serial port communication integration software, magic cube robot and other works.
- First prize of the camera vertical group in the South China of the 12th National smart car competition. (2017.7)
- Complete Rubik's cube robot competition. (2018.3)
- First prize of wireless energy saving group in the 13th National smart car competition (the first prize). (2018.8)

### Department of Automation, Tsinghua University

2019.9-

- **Presented a paper in AAAI2021 as an independent work, and gave a presentation and poster**, entitled: Early Safety Warnings for Long-Distance Pipelines: A Distributed Optical Fiber Sensor Machine Learning Approach. The proposed approach is a novel signal processing feature engineering and identification localization network structure for pipeline safety warning, which outperforms SOTA in real-world identification and real-time deployment, and solves the applicability in different hardware environments and improves the robustness to signal drift.
- As the only student and main contributor, I participated in the whole project of "Long-distance fiber optic safety monitoring and early warning of pipelines in complex environment" cooperated by Tsinghua University and CNPC, and the algorithm written independently has been accepted by the expert group and has been deployed to several long-distance pipeline sites put into operation, and has been integrated into the smart pipeline system of the national pipeline network.
- Published a paper in ICASSP 2021 as an independent work. The paper used the updated BCNN+LightGBM model for the design work of identification and localization algorithm for pipeline safety warning, and performed the field test work.
- In addition, A EI conference paper has been accepted, a third-author SCI journal paper has been accepted, and one invention patent has entered the substantive examination stage.
- In the final workshop of the graduate course "Convex Optimization", I won the second place in the project name "Interframe

Prediction for Multi-view Video Coding", and was mainly responsible for writing the code and report of the project, and ranked second in the class in PSNR.

- In the graduate course "Internet Thinking and Technology", I completed the project "Seeking the Future", and was mainly responsible for writing code for robotics-human-machine interaction and calling open source APIs.

#### **Member of Datawhale & Tsinghua "Data Pie THU" public volunteers**

**2020.3-**

- As a volunteer of Tsinghua "Data Pie THU", I translated and wrote 5 original articles with a total reading of 32k+, among which the original article "AI-based Intelligent Acute Intracranial Hemorrhage Type Detection" was awarded as the best original article of the month.
- As the member of Datawhale team, I participated in Lee Hongyi's "Deep Reinforcement Learning" notes open source project as the main contributor, mainly responsible for exercises and keyword summaries, code additions and document proofreading work, and got 1200+ Star and 300+ Fork in GitHub, link: <https://github.com/datawhalechina/leedeeprl-notes>.
- As the open source project leader and team learning leader, I prepared the "Introductory Data Analysis - Academic Frontier Trends" competition in January 2021 in cooperation with Datawhale and Alibaba Tianchi, and was mainly responsible for baseline design, open source content writing, the live broadcast of the Alibaba Tianchi competition.
- I am responsible for writing code and open source tutorials for the ensemble learning Practice project.

#### **Algorithm competition experience**

- Tianchi platform, the competition "Let's explore happiness together" was ranked 11/4765, and the competition "Industrial steam prediction" was ranked 68/7466 (both were solos).
- Kaggle platform, Competitions Expert title, highest ranking 985/146784, main competitions include "intracranial hemorrhage type detection competition", etc.
- I won the second prize in the 17th National Postgraduate Mathematical Modeling Competition, and was mainly responsible for mathematical modeling and code writing.

#### **Other research practice experience**

- Interned at Chinese Academy of Sciences, where I conducted research on automatic matching algorithms between protein molecules and target molecules, mainly using GCN for drug molecule analysis and feature extraction work.
- Served as a TA for Rakesh Kumar, tenured professor of electrical and computer engineering at UIUC, in the course "Artificial Intelligence for Undergraduates".
- Served as a TA for Nicholas Lane, Associate Professor of Computer Science at Cambridge, in the course "Introduction to Deep Learning".

#### **Activities, Volunteering Experience**

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##### **Hosting and departmental activities**

- During my undergraduate years, I hosted several major events in the institution including two orientation parties, class song contest, and graduation party. (2015.9-2019.6)
- As a graduate student, I chaired the closing ceremony of the 10th "link" program of Tsinghua University and the chairman of the Shenzhen "Youth and Integrity" debate competition. (2019.8, 2019.11)
- During his postgraduate studies, he was a member of the male senior section of the Tsinghua University Chorus, and organized and participated in large-scale performances including the "Ode to the Motherland" in Shenzhen. (2019.8-)
- As a volunteer in the Tsinghua University Graduate Student Association's anti-epidemic activities, he helped the children of front-line medical staff in Wuhan one-on-one to study. (2020.3-)

##### **Other experience**

- During undergraduate studies, I participated in Singers Competition organized by the School of Automation and won the title of Top Ten Singers as well as the Best Popularity Award. (2017.5)
- During graduate school, I participated in activities such as recording the original song "Into the Spring" at Tsinghua University. (2020.5)