

# JIA-ZHOU XU

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## EDUCATION

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University of Science and Technology of China (USTC) *Aug. 2022- Jun. 2026(expected)*  
*B.S. in Physics (majoring in theoretical physics)* *GPA: 3.72/4.3*  
*Ranking: 35/127*  
*Selected courses: Mathematical Analysis B1, 97/100; Mathematical Analysis B2, 95/100;*  
*Theoretical Mechanics A, 92/100*

## EXPERIENCE

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Visit to the Institute of High Energy Physics, Chinese Academy of Science (CAS) &  
University of Science and Technology of China *July 15th, 2023- July 22th, 2023*

During my one-week visit to the Institute of High Energy Physics (IHEP), I gained insights into the research directions and advancements in high-energy physics. Additionally, I had the opportunity to tour research facilities related to synchrotron radiation sources and other cutting-edge equipment.

Exploratory physics experiment, Physics Experiment Teaching Center, University of Science and Technology of China *Sept. 2023- Feb. 2024*

My partner and I conducted an independent study on the potential applications of acceleration sensors. We developed an experimental method using damped oscillation to measure liquid viscosity and obtained promising results.

Summer research intern (advised by Suoqing Ji, co-advised by Liang Dai), Center for Astronomy and Astrophysics, Fudan University *Jul. 2024- Ongoing*

Under the supervision of Suoqing Ji and Liang Dai, I am studying a cold gas nebula associated with the young super star cluster known as “Godzilla.” Observed through gravitational lensing, Godzilla is an intriguing early-universe source with high luminosity and extremely dense gas, drawing the interest of astrophysicists.

2025 TDLI Winter School in Astrophysics, Tsung-Dao Lee Institute, Shanghai Jiao Tong University *January 17th, 2025- January 19th, 2025*

At TDLI, I had the opportunity to attend talks on various topics in astrophysics.

## PROJECTS

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A study on the survival of high density cold gas nebula of Godzilla, Center for Astronomy and Astrophysics, Fudan University *Jul. 2024- Ongoing*

Godzilla is a star cluster at a redshift of 2.37, containing high-density cold gas and active supernova explosions. I use Athena++ for numerical simulations to help us understand how this cold gas survives in such an extreme environment. This research not only contributes to our understanding of the evolution of the interstellar medium (ISM) but also provides insights into the active star formation at redshifts 2-3, broadening our knowledge of the Cosmic Noon.

## ACTIVITIES

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Peer assistance, University of Science and Technology of China *Nov. 2024- Ongoing*  
As a senior mentor, I help three first-year students study mathematical analysis to ensure they pass their exams. Usually I help them once a week.

## SKILLS

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Programming Languages and frameworks  
C/C++, Python,  $\text{\LaTeX}$ , Markdown, Linux (beginner), Git (beginner)

Software  
Athena++, yt, Cloudy (beginner)

Languages  
Chinese (native), English(intermediate)

## AWARDS AND SCHOLARSHIPS

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Outstanding Student Scholarship, Grade 1, University of Science and Technology of China  
*Oct. 2023*  
3% of the whole grade, 4000 RMB (roughly \$548)

First prize of Mathematics competition of Chinese College Students (CMC), Anhui Mathematical Society *Nov. 2023*  
6th place in Anhui province

National Encouragement Scholarship, University of Science and Technology of China  
*Oct. 2024*  
6000 RMB (roughly \$822)