









YICHEN LIU 刘亦辰

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EDUCATION

University of Arizona | Steward Observatory AZ, US
• Ph.D. Student (Advisor: [Professor Xiaohui Fan](#)) Expected 2024/08
University of Illinois Urbana-Champaign | College of Liberal Arts & Sciences IL, US
• *Bachelor of Science* (3.95/4.00) 2022/08 - 2024/05
• Thesis: *Host galaxy properties of HSC-SSP variable AGNs in the COSMOS field* (Advisor: [Professor Xin Liu](#))
• Majors: **Astrophysics** and **Mathematics**; Minors: **Physics**, **Computer Science**, and **Chemistry**
• Graduated with **Highest Distinction** in both majors, **Cum Laude**, and **James Scholar Honor**
University of Macau | Faculty of Science and Technology Macau SAR, China
• Major: **Applied Physics and Chemistry** (with **Honour**); Minor: **Sociology** 2019/08 - 2022/05

RESEARCH ASSISTANTSHIPS

University of Arizona | Steward Observatory AZ, US
• Advisor: [Professor Xiaohui Fan](#) and [Professor Eiichi Egami](#) Expected 2024/08
Peking University | The Kavli Institute for Astronomy and Astrophysics Beijing, China
• Advisor: [Professor Luis C. Ho](#) 2024/05 - Present
University of Illinois Urbana-Champaign | Department of Astronomy IL, US
• Advisor: [Professor Xin Liu](#) 2022/09 - 2024/05
Chinese Academy of Sciences | National Astronomical Observatory of China Beijing, China
• Advisor: [Professor Chaojian Wu](#) 2022/06 - 2022/08
University of Macau | Institute of Applied Physics and Materials Engineering Macau SAR, China
• Advisor: [Professor Hongchao Liu](#) 2019/09 - 2022/05

RESEARCH AREAS

- Topics: Supermassive Black Holes, Galaxies, Ghost Imaging
- Methods: Model Fitting, Observation, Machine Learning

PUBLICATIONS

Summary: 3 papers; total citation: 16; first-author citation: 8; h-index: 2 (based on ADS)

First-Author Publications

1. **Yichen Liu**, Peixia Zheng, Hong-Chao Liu, “[Anti-loss-compression image encryption based on computational ghost imaging using discrete cosine transform and orthogonal patterns](#),” *Optics Express* 30, 14073 (2022)

Co-Author Publications

1. Colin J. Burke, **Yichen Liu**, Charlotte A. Ward, et al., “[Dwarf AGNs from Variability for the Origins of Seeds \(DAVOS\): Properties of Variability-Selected AGNs in the COSMOS Field and Expectations for Rubin Observatory](#),” *arXiv e-prints*, arXiv:2402.06882 (2024)
2. Grant Merz, **Yichen Liu**, Colin J. Burke, et al., “[Detection, instance segmentation, and classification for astronomical surveys with deep learning \(DEEPDISC\): DETECTOR2 implementation and demonstration with Hyper Suprime-Cam data](#),” *Monthly Notices of the Royal Astronomical Society* 526, 1122 (2023)

COLLABORATIONS

Member	LSST Dark Energy Science Collaboration
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AWARDS

Honors and Prizes

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| • University of Illinois Dean's Honor List (2022-2024) | 2024/07 |
| • University of Macau Dean's Honour List (2020 and 2022) | 2022/08 |
| • Third Prize, China Undergraduate Physics Tournament | 2020/10 |
| • National Team Leader at the 2019 European Union Contest for Young Scientists | 2019/09 |
| • Bronze Medal, International Olympiad of Astronomy and Astrophysics | 2018/11 |
| • First Prize, China Adolescents' Science and Technology Innovation Contest | 2018/08 |
| • Second Prize, China National Astronomy Olympiad | 2018/05 |

Scholarships and Grants

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| • AAS 243rd Meeting Travel Grants | 2023/10 |
| • NCSA SPIN Internship (Summer 2023 & Academic Year 23-24) | 2023/08 |
| • Smart Star Scholarship for the Summer Program | 2022/06 |
| • Residential College Scholarship for the Summer Program | 2021/05 |
| • University of Macau Full Scholarship (2019-2021) | 2019/08 |

OBSERVATION EXPERIENCES

Cerro Tololo Inter-American Observatory, 4m/DECam	3 nights (remote)	2023/01 - 2023/04
Personal Remote Observatory at Hebei, China, 10in/QHY9sm	astrophotography	2019/08 - 2022/08

COLLOQUIA AND SEMINARS

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| • NCSA lightning talk (IL, US) | 2023/07 |
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PRESENTATIONS IN MEETINGS AND CONFERENCES

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| • Poster, <i>2nd Annual NCSA Student Research Conference</i> (IL, US): "Detection, Instance Segmentation, and Classification for Astronomical Surveys with Deep Learning" | 2024/04 |
| • Talk, <i>243th Meeting of the American Astronomical Society</i> (LA, US): "Host galaxy properties of variable AGNs in COSMOS and prospects for LSST" | 2024/01 |
| • Poster, <i>STEM Career Exploration and Symposium</i> (IL, US) | 2023/07 |
| • Poster, <i>EU Contest for Young Scientists</i> (Sofia, Bulgaria): "Narrow-Band Photometry of Emission Nebulae Using Small-Caliber Telescope" | 2019/09 |

TEACHING EXPERIENCES

University of Illinois at Urbana-Champaign Department of Astronomy	IL, US
• Undergraduate Tutor for PHYS 213, 214, and ASTR 210	2023/01 - 2023/05
University of Macau Unofficial Seminar of Physics	Macau SAR, China
• Crafted and taught " SPUM 102 The tools of the physical tools " (video), delivering in-depth explorations of mathematical concepts beyond the standard undergraduate curriculum	2022/02 - 2022/05

OUTREACH

Physics and Mathematics Video Creator on Bilibili	2021/09 - 2022/08
• Complex Variables Video Series (in Chinese, currently over 160,000 views)	
President of Beijing Youth Astronomy Union	2017/08 - 2018/08
• Sidewalk astronomy near Beijing's Olympic Park (organizer)	

- WeChat Official Account “北京市中学生天文联盟” (manager, with a post over 100,000 views)
- 2nd Beijing Astronomy and Astrophysics Olympiad (organizer)

DEPARTMENTAL SERVICES

- Director of the Physics Society, University of Macau *2020/08 - 2021/02*
- Student Helper of the Department of Physics and Chemistry, University of Macau *2020/07 - 2020/10*

PROFESSIONAL SKILLS

Programming: Python/Jupyter, \LaTeX , MATLAB, Git, Arduino, Bash/Zsh, C/C++, Mathematica, Julia, Docker, SQL, and Java

Softwares: COMSOL, Altium Designer, KiCAD, Solidworks, and Cinema 4D