









# YICHEN LIU 刘亦辰

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 Yichen's ADS Library

## EDUCATION

**University of Arizona** | Steward Observatory AZ, US  
• Ph.D. Student (Advisor: [Professor Xiaohui Fan](#)) 2024/08 - Present

**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 & Technology + Honour College Macau SAR, China  
• Major: **Applied Physics and Chemistry**; Minor: **Sociology** 2019/08 - 2022/05

## RESEARCH ASSISTANTSHIPS

**University of Arizona** | Steward Observatory AZ, US  
• Advisor: [Professor Xiaohui Fan](#) and [Professor Eiichi Egami](#) 2024/08 - Present

**Peking University** | The Kavli Institute for Astronomy and Astrophysics Beijing, China  
• Advisor: [Professor Luis C. Ho](#) 2024/05 - 2024/08

**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: Black Holes, Quasars, Galaxies, Computational Imaging
- Methods: Technical improvements, Model Fitting, Observation, Machine Learning

## PUBLICATIONS

Summary: total count = 5, total citation = 28, first-author citation = 8, h-index = 3 (based on ADS)

### First-Author Publications

1. **Yichen Liu**, Colin Burke, Charlotte A. Ward, et al., "Host galaxy properties of variable AGNs in COSMOS and prospects for LSST," *American Astronomical Society Meeting Abstracts* 243, 342.04 (2024)
2. **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. Grant Merz, Xin Liu, Samuel Schmidt, et al. (incl. **Yichen Liu**), "[DeepDISC-photoz: Deep Learning-Based Photometric Redshift Estimation for Rubin LSST](#)," *arXiv e-prints*, arXiv:2411.18769 (2024)

2. Colin J. Burke, **Yichen Liu**, Charlotte A. Ward, et al., “[DAVOS: Dwarf Active Galactic Nuclei from Variability for the Origins of Seeds: Properties of Variability-selected Active Galactic Nuclei in the COSMOS Field and Expectations for the Rubin Observatory](#),” *The Astrophysical Journal* 971, 140 (2024)
3. 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

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Member                      LSST Dark Energy Science Collaboration

## AWARDS

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### Honors and Prizes

- 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

- 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

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Magellan Baade, 6.5m/IMACS	4 nights (remote)	2024/09
CTIO Blanco, 4m/DECam	3 nights (remote)	2023/01 - 2023/04
Personal Remote Observatory at Hebei, China, 10in/QHY9sm		2019/08 - 2022/08
Amateur <a href="#">Astro-Landscape and Deep-Sky Photography</a>		2014/10 - Present

## COLLOQUIA AND SEMINARS

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- NCSA lightning talk (IL, US) 2023/07

## PRESENTATIONS IN MEETINGS AND CONFERENCES

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- Poster, *245th Meeting of the American Astronomical Society* (MD, US): “GalfitT: Multi-epoch Image Deconvolution and Light Curve Extraction” 2025/01
- Poster, *2nd Annual NCSA Student Research Conference* (IL, US): “Detection, Instance Segmentation, and Classification for Astronomical Surveys with Deep Learning” 2024/04
- Talk, *243th Meeting of the American Astronomical Society* (LA, US): “Host galaxy properties of variable AGNs in COSMOS and prospects for LSST” 2024/01
- Poster, *STEM Career Exploration and Symposium* (IL, US) 2023/07
- Poster, *EU Contest for Young Scientists* (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 delivered “ <a href="#">SPUM 102 The tools of the physical tools</a> ” (video), providing 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
• <a href="#">Complex Variables Video Series</a> (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

## RESEARCH MENTEES ADVISED/CO-ADVISED

Arshia Akhtarkavan	University of Arizona	2024 - Present
Diego Miura	Yale University	2024 - Present

## PROFESSIONAL SKILLS

<b>Programming:</b>	Python/Jupyter, $\text{\LaTeX}$ , MATLAB, Git, Arduino, Shell Bash/Zsh, C/C++, Mathematica, Julia, Docker, SQL, and Java
<b>Softwares:</b>	COMSOL, Altium Designer, KiCAD, Solidworks, and Cinema 4D