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PROFESSIONAL APPOINTMENTS

2024 - present	Associate Professor in Astrophysics <i>The Ohio State University</i> Center for Cosmology and Astroparticle Physics, Faculty
2024 - present	Adjunct Scientist <i>Max Planck Institute for Astronomy</i>
2024 - present	Honorary Associate Professor
2022 - 2024	Associate Professor (tenured) in Astrophysics & Computer Science
2021	Assistant Professor (tenured) in Astrophysics & Computer Science <i>Australian National University</i> Visiting Professor - Johns Hopkins (2022), Universiti Malaya (2024-25), Tsinghua (2024-27)
2017 - 21	NASA Hubble Fellow, Carnegie-Princeton Fellow, Institute for Advanced Study Fellow <i>Institute for Advanced Study, Princeton</i> <i>Princeton University</i> <i>Carnegie Institution for Science</i> A unique four-way joint postdoctoral fellowship position at these three institutions

EDUCATION

2017	PhD, Astrophysics and Astronomy <i>Harvard University</i> Supervisor: Charlie Conroy Funded through a NASA Earth and Space Science Fellowship
2014	Master of Arts, Astrophysics and Astronomy <i>Harvard University</i>
2012	Bachelor (First-Class Honours, 2011) and Master of Science, Physics, minor in Mathematics <i>National University of Singapore</i> Supervisor: Ken Freeman (Australian National University) National Academy of Science Award for being the best Master student in Physics Institute of Physics Medal for being the best Honours year student in Physics Jurong Book Prize for being the best sophomore student in Physics
2011	Engineer's Degree (equivalent to Bachelor and Master of Engineering) <i>Ecole Polytechnique, France</i> Concurrent with the degrees from the National University of Singapore Funded through a full Eiffel scholarship

RESEARCH INTEREST

Our research group advances statistical inference in astronomy through the application of machine learning techniques, leveraging the wealth of data from large-scale surveys across various observational domains: spectroscopy (SDSS-V, DESI), astrometry (Gaia), photometry (Euclid, Roman, CSST), and time-series observations (LSST, TESS, PLATO). We investigate a wide range of topics spanning all cosmic scales, with a primary focus on galactic evolution, particularly our own Milky Way and its neighboring galaxies in the Local Group. Our work extends to refining inference techniques in stellar spectroscopy and asteroseismology by developing deep learning foundation models for both time series and spectroscopic data. Additionally, we are pushing the boundaries of cosmological parameter inference through simulation-based approaches utilizing state-of-the-art generative models, with applications in weak lensing and reionization studies. Beyond these areas, as co-founder of UniverseTBD and current leader of AstroMLab, our group is at the forefront of agentic research, harnessing the capabilities of large language models as research agents to autonomously formulate scientific hypotheses, design experiments, execute research, and interpret the results.

OTHER PROFESSIONAL EXPERIENCES

2020-present	Columnist <i>Sin Chew Daily, Malaysia</i> 星洲日报 Largest Chinese newspaper outside Greater China, with a daily circulation > one million
2020-21	Chief Science Officer <i>Hephaestus Analytical, London</i> London-based start-up leveraging advanced data analytics to combat art forgeries

RESEARCH INCOME AS THE PRINCIPAL INVESTIGATOR

U\$3.5M in funding + U\$5.5M worth of computing

2025	NSF National Artificial Intelligence Research Resource Program	
2024	NSF Astronomy and Astrophysics Research Grants	
2024	Alexander von Humboldt Fellowship	
2023-25	Microsoft Accelerating Foundation Models Academic Research Grant	
2023	OpenAI Research Access Program	
2021	Australian Research Council DECRA Fellowship	
2021	International Astronomical Union Grant to host the first IAU Symposium in Southeast Asia since 1990	
2020	ANU Futures Scheme	
2018	NASA Hubble Research Award	
2017	Alexander von Humboldt Research Award (<i>relinquished</i>)	
2015	NASA Earth and Space Science Research Award	
2025	NVIDIA Academic Grant Program	26K GPU Hours
2024-25	Oak Ridge National Laboratory Frontier Nodes	460K GPU Hours
2020-24	Australian National Computational Infrastructure	112M CPU Hours

AWARDS AND HONOURS

2024	Alexander von Humboldt Fellowship	
2021	Australian Research Council Discovery Early Career Researcher Award (DECRA)	
2019	AURA Future Leader	by The Association of Universities for Research in Astronomy
2018	NASA Hubble Fellowship	
2017	Institute for Advanced Study Fellowship	
2017	Carnegie-Princeton Fellowship	
2017	CCAPP Prize Prize in Cosmology and AstroParticle Physics	
2016	Selected to attend the Lindau Meeting of Nobel Laureates	
2015	NASA Earth and Space Science Fellowship	
2014	Malaysian Perdana Scholar Award	
2005	Australian Mathematics Competition Gold Medal	1/10,000 participants from >8 countries
2005	Top 10 in both Mathematics and Computer Science Nationwide, Unified Examination Certificate	

REFEREED ARTICLES

Total refereed publications: 212
This includes 1 in Nature and 3 in Nature Astronomy
and 9 in ICML (with 2 spotlight presentations), as well as 4 NeurIPS workshop papers

84 papers as first/joint first (28) or supervising author, and 23 other papers as second/third author
These are referred to as “key role” papers, comprising half (107/212) of my total publications.

Total citations: 9100
3500 citations are from key role papers

h-index: 51
Out of which, the h-index from key role papers is 33

m-index = 4.1
This is calculated as h-index divided by the years since the first publication.
An m-index value of 3 is considered to characterize truly unique individuals, according to [Hirsch 2005](#)

ACADEMIC PRESENTATION

- | On average 45 presentations per year
- | Departmental colloquia/seminars: a career total of 209 talks
including 54 invited departmental colloquia + two-thirds (136/209) were invited talks
Invited departmental colloquia includes Yale, MIT, Tokyo U., Tsinghua, Peking U., Max Planck, EPFL, UToronto, Georgia Tech, UTAustin, OSU, UBC, Melbourne, Hawaii, Penn State, Maryland
- | Conferences: a career total of 77 presentations, of which two-thirds (44/77) were invited

RESEARCH HIGHLIGHTS

Works from students and postdocs whom I supervised are indicated with *

Machine Learning

Agentic AI Systems for Astronomy

Pioneered autonomous discovery using real astronomical data through multi-agent LLM collaboration;
Developed the AstroLLaMA series, the first astronomy-specialized large language model.

[Sun*](#), [YST+](#), 2024b, 2024a | [YST & AstroMLab, 2024](#) | [Nguyen*](#), [YST+ 2023](#) | [O'Neill*](#), [YST+](#), 2023

Beyond Field-Level Inference with Graph Neural Networks and Point Cloud Generative Models

Advanced cosmological and galactic inferences using graph and point cloud generative deep learning models

[Lee+](#) 2024 | [YST & Sharma*](#), [ICML W, 2023](#) | [Tang*](#) & [YST, ICML W, 2022](#) ([ICML spotlight talk](#))

Physics-Inspired Neural Networks

Developed neural network-based solvers for PDEs to determine gravitational potentials and CGM properties.

[Green, YST & Kamdar*](#), 2023 | [Nguyen, YST+, NeurIPS W, 2023](#) | [Green & YST, NeurIPS W, 2020](#)

Cosmology

Alternate Statistics for Higher-Order Moments

Introduced scattering transform to enhance quantification of cosmic web, reionization, and parity violation.

[Craigie*](#), [Taylor, YST+ 2024](#) | [Greig*](#), [YST+ 2022](#) | [Cheng*](#), [YST+ 2020](#) ([Intl. Astrostatistics Assoc. Award](#))

Black Hole Physics & Lyman-Alpha Forest

Developed unsupervised methods (QFA) to infer quasar continua from the observed quasar spectra

[Sun*](#), [YST & Zheng, 2023](#) | [Sun*](#), [YST & Zheng, ICML W, 2022](#)

Galaxy Evolution

Star Formation, Interstellar Medium & Galactic Outflow

Advanced statistical modeling to probe star formation, ISM dynamics via the elemental signatures in stars.

[YST & Ji 2024](#) | [Sharda, YST+ 2024](#) | [YST & Weinberg 2022](#) | [Krumholz & YST, 2018](#)

Secular Evolution of Galaxies

Quantified how star migration and molecular cloud interactions contribute to the Milky Way's evolution.

[Frankel*](#), [Sanders, YST+, 2020](#) ([Ernst Patzer Prize](#)) | [YST & Rix, 2019](#) | [Frankel*](#), [Rix, YST+, 2018](#)

Stellar Astrophysics

Stellar Binaries, Close & Wide

Developed single-epoch methods for detecting binaries, improving mass calibration and formation studies.

[Hwang, YST, Cheng & Speagle, 2023](#) | [Hwang*](#), [YST, & Zakamska, 2022](#) | [El-Badry*](#), [YST+, 2019](#)

Stellar Spectroscopy and Asteroseismology

Developed Transformer-based neural networks to extract detailed stellar properties from spectra.

Established neural scaling laws for spectroscopy and time series data, advancing foundational models.

[Rozanski*](#), [YST+, 2024](#) | [Pan*](#), [YST+ 2024](#) | [Zhang, Xiang, YST+ 2024](#) | [Xiang, YST+, 2019](#) | [YST+, 2019](#)

Exoplanet

Planet Engulfment

Showed that > 10% of stars consume planets, suggesting frequent scattering in super-Earth systems.

[Liu*](#), [YST, Yong*+, Nature \(Cover Page\), 2024](#) | [Yong*](#), [Liu*](#), [YST+, 2023](#)

SUPERVISION

Supervised 10 postdocs and 52 students (29 PhDs, 3 Masters, 18 undergraduates, 2 high-schoolers)
28 of these postdocs/students are from the Ohio State University or Australian National University

which has led to 64 refereed publications

Three of which have won key awards, including International Astrostatistics Associate Award
Max Planck's Ernst Patzer Prize, and IOP Publishing Top Cited Paper Award

TEXTBOOK

[A Beginner Guide to Astro-Statistics and Astro-Machine-Learning](#)

Author: Yuan-Sen Ting

A comprehensive textbook exploring essential computational, statistical, and data analysis techniques for daily astronomical research. Covers topics from Bayesian inference and regression to neural networks and MCMC methods, with companion Python tutorials.

TEACHING

2023-present	Lecturer – Astronomical Computing (ASTR4004/8004), undergraduate and graduate school level – Statistical Machine Learning (COMP4670/8600) , undergraduate and graduate school level	<i>Australian National University</i>
2020-present	Summer School Lecturer / Workshop Lecturer / Guest Lecturer American University of Sharjah (2024) Deep Learning and Stellar Spectroscopy Intersect 4th collaborative course (2024) HPC and Data in Astrophysics Westlake University (2024) Expediting Astronomical Research with LLMs and SBI University of Chicago (2024) Generative Models for Astronomy University of Rwanda (2024) Unsupervised Learning with Neural Networks Universiti Malaya (2023) Introduction to Python with Co-Pilot and ChatGPT University of Hawaii (2023) Introduction to Simulation-Based Inferences IAU Symposium 377 (2023) Introduction to Python and Deep Learning Australian ANITA (2022) Introduction to Flow-Based Generative Modeling Tsinghua University (2020) Higher-Order Moment Statistics with Scattering Transform	
2023	Online Education Platform Contributor Contributed to a series of online astronomy educational materials in Malaysia	<i>Frogasia</i>
2021-23	Academic Council Lecturing, setting test questions, and selecting a Malaysian team for the International Olympiad	<i>Malaysian Olympiad on Astronomy & Astrophysics</i>
2017	Community Teaching in Mathematics PTI is a volunteer program teaching accredited college classes to prison inmates in New Jersey	<i>Princeton Prison Teaching Initiative (PTI)</i>
2014	Teaching Assistant in Astrophysics – Stellar Astrophysics, graduate school Level	<i>Harvard University</i>
2010-11	Instructor in Physics and Mathematics – Mathematics: 1. Topology 2. Linear Algebra 3. Algebra – Physics: 1. Classical Mechanics 2. Electromagnetism	<i>National University of Singapore</i>

COMMUNITY ENGAGEMENT

Public engagement and media outreach are integral parts of my academic career. I have given a [TEDx talk](#) in my home country of Malaysia, participated in a [podcast](#), and have been writing [monthly columns](#) for Malaysia's largest Chinese newspaper since 2020. My experiences growing up in Malaysia have instilled in me a strong belief in the transformative power of education and have driven me to create various educational resources, including two [TED educational videos](#) that have collectively amassed approximately four million views worldwide. I have also developed the first interactive kiosk at the Harvard Science Center and designed numerous [interactive applets](#), participated in the [Skype a Scientist program](#) during the pandemic and [taught in prison](#). Furthermore, I have contributed to online education by creating a course on edX and editing a [1200-page quantum field theory \(QFT\) textbook](#) by Sidney Coleman.

Media

2023	TEDx Talk @ Petaling Street, Kuala Lumpur, Malaysia <i>Seeing Humanity through Dystopian AI</i>	
2020-24	Monthly Columns, Sin Chew Daily, Malaysia. A recent example below 2023/08: AI, ChatGPT, and My Mom's Roomba	translation
2024	TEDx Podcast 启动一刻 , Kuala Lumpur, Malaysia	
2024	Featured Interview regarding the Nature publication, Sin Chew Daily, Malaysia	
2024	Featured Interview on Astrobites	
2023	Featured on ANU's computer science departmental webpage's frontpage	
2023	Featured on ANU's computer science "AI Feature"	
2023	Featured on an NASA Cosmic Origins Program interview	
2023	Featured on UK's Royal Astronomical Society - "The Observatory"	
2022	Featured in the "Search for Life in the Universe," a Malaysian government-funded documentary	
2022	Featured in Australian Government Global Talent Program as a highlighted recipient	
2020	Featured Interview , National Newspaper, Nanyang Daily, Malaysia	translation
2020-22	Featured Interview 1, 2 , National Newspaper, Sin Chew Daily, Malaysia <i>A Galactic Archaeologist who Traces the Long History of Stars</i>	translation
2018	Featured in Institute for Advanced Study Newsletters, Featured Article 1 , Featured Article 2	
2013	TED-Ed Video: How to Measure Extreme Distances (viewed 3.4M times)	
2013	TED-Ed Video: How do We Study the Stars? (viewed 0.8M times)	

Interactive Applets

2014	Lead developer of an EdX course , showcasing interactive applets for teaching astronomy
2014	Lead developer of the first Harvard scientific interactive kiosk at the Harvard science center

Other Writing

2019	Editor, <i>International Astronomical Union Symposium 377 Proceeding</i>
2019	Editor, textbook), <i>Quantum Field Theory, Lectures of Sidney Coleman</i>
2013	Astrobites contributor
2013	Harvard Science in the News contributor
2013	Classroom visit, "There's a Scientist in My Classroom!" Program, Cambridge, MA

PROFESSIONAL LEADERSHIPS AND SERVICES

In addition to my pioneering work in applying machine learning to astronomical research, I have taken on significant leadership roles in advancing spectroscopic surveys. I am actively shaping the future of wide-field surveys using 6.5m-15m telescopes, serving as the Milky Way group co-leader for the [MUST survey](#) and previously as the machine learning group leader for the US-led [FOBOS survey](#). Furthermore, I initiated the C3PO spectroscopic program, securing 12 nights on premier telescopes such as Keck, Magellan, and VLT (valued at approximately \$1M USD) to study nearby comoving stars with unprecedented precision. This effort culminated in a [Nature publication](#) featured on the cover. I am also honored to serve as the inaugural chairperson of the [NASA Cosmic Program Star Interest Group](#) since 2021.

Maintaining strong ties to my Malaysian roots, I am committed to addressing the challenges faced by science in my home country. With only about 30 individuals holding a PhD in astronomy among Malaysia's 30 million inhabitants, I have taken proactive steps to promote astronomy within the nation. In 2023, I led the organization of the first two major astronomy conferences and a summer school in Malaysia. I co-founded the [Global Malaysian Astronomer Convention](#), aimed at showcasing the work of Malaysian astronomers worldwide, engaging aspiring Malaysian students, and influencing national educational policies. Additionally, I spearheaded a successful grant proposal to the International Astronomical Union (IAU), resulting in the [first-ever IAU symposium in Malaysia](#) - the first IAU conference in Southeast Asia since 1990. As part of ongoing efforts, I serve as the Malaysian representative to the [East Asian Observatory](#), an initiative to strengthen astronomy in developing Southeast Asian nations. Lastly, in 2023, I co-chaired the [Computational Genomics Conference at ANU](#), facilitating interdisciplinary scientific endeavors at ANU.

Other Involvements:

2024-present	Co-PI	NSF's Future of AI and the Mathematical and Physical Sciences (AI+MPS)
2024-present	Institution Lead	SDSS-V Collaboration Council
2022-present	Co-Chair	IEEE " Deep Vision in Space " Task Force
2021-present	PhD Thesis Committee	Samantha Usman - University of Chicago
2025	Review Panelist	NASA's Roman Space Telescope Research Participation Opportunities

2025	Co-Chair	IJCNN 2024 Workshop - Deep Vision in Space @ Rome, Italy
2025	Reviewer	Chilean Agency for Research and Development
2024	Reviewer	Hubble Space Telescope Cycle 32 Bridge
2024-25	Committee	Graduate Student Committee, OSU
2024	Committee	Graduate Student Admission Committee, OSU
2024	PhD Thesis Committee	Wassim Tenachi - Observatoire Astronomique de Strasbourg
2024	Organizing Committee	4th Collab. Graduate Edu. - HPC and Data in Astro. @ Australia
2024	Reviewer	Austrian Science Fund (FWF) ESPRIT Programme
2024	Co-Chair	IJCNN 2024 Workshop - Deep Vision in Space @ Yokohama, Japan
2024	SOC	Astronomy Big Data Exploration Camp @ Yunnan, China
2024	SOC	Simulation-Based Inference for Galaxy Evolution @ Bristol, UK
2024	SOC	New Comp. Methods in Milky Way Dynamics @ Ringberg, Germany
2024	Reviewer	NASA Future Investigators in Earth, Space Science & Technology
2023-24	Advisory Committee	Machine Learning in Australian Astronomy
2023	Australia Co-I	SpelTel: A 10-12 meter class Spectroscopic Survey Telescope
2023	Colloquium Committee	ANU Research School for Astrophysics and Astronomy
2023	Editor	Computational Astronomy, Intelligent Computing, AAAS
2023	SOC	IEEE WHISPER Multi-Modal Segmentation Contest @ Rome, Italy
2023	SOC Workshop Chair	International Joint Conf. on Neural Networks @ Gold Coast, Australia
2023	SOC	Astronomical Stellar Parameter Measurement @ Yunnan, China
2022	Advisory Committee	ANU Jubilee Fellowship
2022	Book Reviewer	World Scientific
2022	SOC	Machine Learning in Cool Stars @ Toulouse, France
2021-24	Chief Investigator	Australian-Rubin Observatory Agreement
2021	Advisory Committee	CSST, a UV-optical deep imaging satellite
2020-21	Working Group Leader	Earth2.0, a space satellite searching for Earth-analogs
2020	Review Panelist	NASA Astrophysics Data Analysis Program
2020	SOC	Machine Learning and Physics Conference @ Beijing, China
2020	Time Allocation Committee	Japan Subaru Telescope
2019-20	Reviewer	NASA Future Investigators in Earth, Space Science & Technology (x2)
2019	Time Allocation Committee	Gemini Observatory - Canada
2018-19	Time Allocation Committee	United States National Optical Astronomy Observatory
2018	Time Allocation Committee	China Telescope Access Program
2017-18	SOC Chair	The 1 st and 2 nd Princeton Postdocs Symposium
2013-16	Lead Ambassador	World-Wide Telescope (WWT) Ambassador Program
2012	Instructor	Harvard College Observing Program
2019-2023	PhD Thesis Committee	Tyler Nelson - University of Texas, Austin
2019	Master Thesis Committee	Spencer Bialek - University of Victoria
2017-present	Journal Referee	Nature, Nature Astronomy, ApJ, ApJL, MNRAS, A&A, JCAP, ICML, Annals of the Institute of Statistical Mathematics, Modern Physics Letter A, The Innovation, Universe

REFERENCES

Prof. David Weinberg | Distinguished University Professor
Ohio State University | *phone: +1-614-292-2022, email: weinberg.21@osu.edu*

Prof. Hans-Walter Rix | Director
Max Planck Institute for Astronomy | *phone: +49-6221-528-210, email: rix@mpia.de*

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Carnegie Institution for Science | *phone: +1-626-304-0257, email: mulchaey@carnegiescience.edu*

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COMPLETE LIST OF SUPERVISIONS

I have acted as the main supervisor (“primary”) or as one of the two key supervisors (“secondary”) for my students. This list includes only those students with whom I interact on a weekly basis throughout my supervision period.

- ‘Term’ denotes short-term projects, lasting from six months to a year.
- ‘Thesis’ indicates multi-year projects.
- ‘HD’ represents an Honours thesis awarded with high distinction, first-class honors or both.

Postdocs / Research Associates

2025–present	Milan Pesta	OSU (Astrophysics)	primary supervisor	
2022–present	Erwin Chen	OSU (Astrophysics)	primary supervisor	2 papers
2023–present	Tomasz Rózański	ANU (Astrophysics)	primary supervisor	2 papers
2023–present	Jiadong Li	Max Planck	primary supervisor	1 paper
2023–24	Bradley Greig	ANU (Astrophysics)	primary supervisor	5 papers
2022–24	Jie Yu	ANU (Computer Science)	primary supervisor	3 papers
2020–24	Ioana Ciucă	ANU Jubilee + Astro3D Fellow	primary supervisor	4 papers
2020–23	David Yong	ANU (Astro) → Government	primary supervisor	1 paper
2023–24	Qinghui Sun	Tsinghua University	secondary supervisor	1 paper
2021–24	Fan Liu	Swinburne University	secondary supervisor	1 paper

PhD Students

2024–present	Dylan Leung	OSU (Physics)	primary supervisor (term)	
2024–present	James McNeil	ANU (Computer Science)	primary supervisor (thesis)	
2024–present	Yuwei Yang	ANU (Computer Science)	primary supervisor (thesis)	1 paper
2023–present	Yanjun Sheng	ANU (Astrophysics)	primary supervisor (thesis)	1 paper
2022–present	Zechang Sun	Tsinghua University	primary supervisor (thesis)	4 papers
2023–24	Maja Jablonska	ANU (Astrophysics)	secondary supervisor (thesis)	
2022–23	Zefeng Li	ANU → Durham University	secondary supervisor (thesis)	1 paper
2017–19	Jane Lin	ANU → industry	secondary supervisor (thesis)	2 papers
2024	Milan Pesta	Charles University	primary supervisor (term)	
2023–24	Junhui Liu	Xiamen University	primary supervisor (term)	1 paper
2023–24	Rui Pan	Hong Kong UST	secondary supervisor (term)	2 papers
2022–25	Matt Craigie	U. Queensland → JPL/NASA Fellow	primary supervisor (thesis)	1 paper
2022–23	Jiaxuan Li	Princeton University	primary supervisor (term)	
2022–23	Xiaosheng Zhao	Tsinghua → J. Hopkins	primary supervisor (term)	1 paper
2022–23	Tomasz Rózański	Wroclaw University → ANU	primary supervisor (term)	1 paper
2021–22	Sunny Tang	UIUC → Finance, JP Morgan	primary supervisor (term)	1 paper
2021–22	Danny H. Darrington	Liverpool LJMU → CCA Fellow	primary supervisor (term)	
2020–21	Hsiang-Chih Hwang	J. Hopkins → IAS → Renaissance	primary supervisor (term)	3 papers
2020–21	Tyler Nelson	UT Austin → U. Southern Maine	primary supervisor (term)	1 paper
2020–21	Sankalp Gilda	U. Florida → industry	secondary supervisor (term)	1 paper
2019–21	Madeline Lucey	UT Austin → UPenn/NSF Fellow	primary supervisor (term)	2 papers
2019–21	Rohan Naidu	Harvard → MIT Pappalardo/Hubble	secondary supervisor (term)	1 paper
2019–20	Sihao Cheng	J. Hopkins → IAS-Perimeter Fellow	secondary supervisor (thesis)	1 paper
2018–20	Nathan Sandford	UC Berkeley → U. of Toronto	secondary supervisor (term)	2 papers
2018–20	Lachlan Lancaster	Princeton → Simons Junior Fellow	secondary supervisor (term)	1 paper
2017–20	Neige Frankel	Max Planck → UToronto Fellow	secondary supervisor (thesis)	3 papers
2017	Kareem El-Badry	Berkeley → Harvard → Caltech	secondary supervisor (term)	2 papers
2016–21	Harshil Kamdar	Harvard → industry	secondary supervisor (thesis)	3 papers
2016–19	Mikhail Kovalev	Max Planck → Yunnan postdoc	secondary supervisor (thesis)	1 paper

Master Students

2023	Josh Nguyen	ANU (MSc, CS) → UPenn PhD	primary supervisor (term)	1 paper
2022–23	Yanjun Sheng	ANU (MSc, Astro) → ANU PhD	primary supervisor (thesis)	1 paper
2022–23	Rachel Lim	Cambridge → Finance, Deloitte	primary supervisor (term)	

Undergraduates

2022–25	Bhavesh Sharma	ANU (Honours, CS)	primary supervisor (thesis)	HD, 1 paper
2022–23	Ziqi Yuan	ANU (Honours, Astrophysics, PhB)	primary supervisor (thesis)	HD
2023	Anthony Siharath	ANU (Honours, CS)	secondary supervisor (thesis)	HD
2022	Shu Zou	ANU (Honours, CS) → ANU PhD	primary supervisor (thesis)	HD
2022	Bowen Tang	ANU (Honours, CS) → ANU PhD	primary supervisor (thesis)	HD
2021–23	Zeefan Khan	ANU (Honours, Engineering)	primary supervisor (thesis)	
2023–24	Charles O’Neill	ANU (CS, PhB) → Oxford PhD	secondary supervisor (term)	1 paper
2022	Bede Denham	ANU (Engineering)	secondary supervisor (term)	
2021–22	Anne Xie	ANU (Astrophysics, PhB)	primary supervisor (term)	
2021–22	Ashley Tan	ANU (Astrophysics)	primary supervisor (term)	
2021–22	Yangda Bei	ANU (CS, PhB)	primary supervisor (term)	
2020–21	Yukang Liu	ANU (CS) → Simon Fraser PhD	primary supervisor (term)	
2021–24	Jiashu Pan	Nanjing → Westlake PhD	primary supervisor (thesis)	3 papers
2021–22	Zechang Sun	Tsinghua → Tsinghua PhD	primary supervisor (thesis)	1 paper
2021–22	Yong-Sheng Yap	National Tsinghua → Cambridge PhD	primary supervisor (term)	
2020–21	Vedant Chandra	Johns Hopkins → Harvard PhD	primary supervisor (term)	
2019–20	Teaghan O’Briain	Victoria → UVictoria PhD	secondary supervisor (thesis)	2 papers
2018	Erwin Chen	Wisconsin → USydney PhD → ANU	primary supervisor (term)	

High School Students

2024–present	Dun Li Chan	High School	primary supervisor (term)	
2019	Jupiter Ding	High school → Princeton UG	primary supervisor (term)	

RECENT ACADEMIC PRESENTATIONS (from the past year)

Conference Presentations

Invited Talk , “Data Science and Astronomy,” Tokyo, Japan	Oct 2024
Invited Talk , “A Mini-Workshop on the Bulge in Tokyo”, Tokyo, Japan	Oct 2024
Contributed Talk, “Lyman Alpha Forest Workshop.”, Columbus, United States	Sep 2024
Invited Talk , “Hey GPT! Can You Help Me Understand the Universe?,” remote event	Sep 2024
Contributed Talk, “1st Science Understanding through Data Sci. Conf.”, Pasadena, United States	Aug 2024
Invited Talk , “David Weinberg’s 60th Birthday Conference,” Salt Lake City, United States	July 2024
Invited Talk , “International Conference on Machine Learning for Astrophysics,” Catania, Italy	July 2024
Plenary Talk , “National Computational Infrastructure Intersect Showcase 2024,” remote event	June 2024
Invited Talk , “#1 Hangzhou Micro-Workshop on The Frontiers of Astrophysics,” remote event	June 2024
Plenary Talk , “AstroAI Workshop,” Cambridge, USA	June 2024
Contributed Talk, “Globular Clusters and Their Tidal Tails,” Toronto, Canada	May 2024
Invited Talk , “2024 STATSTRO Workshop,” remote event	May 2024
Invited Talk , “High Table on Space, Bruce Hall, Australian National University,” Canberra, Australia	April 2024
Invited Talk , “The Future of Discovery in the Age of Human-AI Collaboration,” Ann Arbor, USA	March 2024

Departmental Colloquia & Seminars

Invited talks are in **boldface**, departmental colloquia are marked with **.

Stanford University , Palo Alto, United States	April 2025
University of Chicago , Chicago, United States	April 2025
NSF-Simons AI Institute for Cosmic Origins (CosmicAI)** , Austin, United States	April 2025
The University of Texas at Austin** , Austin, United States	April 2025
Boston University** , Boston, United States	Feb 2025
University of Pittsburgh** , Pittsburgh, United States	Dec 2024
Massachusetts Institute of Technology (IAIFI)** , Cambridge, United States	Nov 2024
National Astronomical Observatory of Japan , Tokyo, Japan	Oct 2024
AI for Quantum Field Theory Seminar Series , remote event	Oct 2024
KEK , Tsukuba, Japan	Oct 2024
National Astronomical Observatory of Japan , Tokyo, Japan	Oct 2024
The Astrominformatics & Astrostatistics Commission of the IAU , remote event	Aug 2024
Shanghai Observatory , Shanghai, China	July 2024
Shanghai Jiaotong University , Shanghai, China	July 2024
Shanghai Normal University , Shanghai, China	July 2024
Jet Propulsion Laboratory , Pasadena, United States	June 2024
Harvard University , Cambridge, United States	June 2024
City University of Hong Kong** , Hong Kong, China	May 2024
The Chinese University of Hong Kong** , Hong Kong, China	May 2024
University of Tennessee, Knoxville , Knoxville, United States	March 2024
Oak Ridge National Laboratory , Knoxville, United States	March 2024
UC Davis** , Davis, United States	March 2024
Georgia Institute of Technology** , Atlanta, United States	March 2024
Trillion Parameter Consortium Seminar Series , remote event	March 2024
Westlake University , Hangzhou, China	March 2024
Universiti Malaya** , Kuala Lumpur, Malaysia	Feb 2024
National University of Singapore** , Singapore, Singapore	Feb 2024
National University of Singapore (Institute of Data Science), Singapore, Singapore	Feb 2024
National Astronomical Research Institute of Thailand , Chiang Mai, Thailand	Jan 2024
University of Liverpool, remote event	Jan 2024

*: publications from students or postdocs whom I supervised.

** : equal contribution / joint first-authored

— Refereed Publications - As 1st-3rd or Supervising Author—

— 2025 —

212. **T. Rozanski** & **Y.-S. Ting**, *The Open Journal of Astrophysics*, submitted
Scaling Laws for Emulation of Stellar Spectra
211. **N. Ramachandra** & **Y.-S. Ting**, *Physical Review D*, submitted
Teaching LLMs to Speak Spectroscopy
210. **Y.-S. Ting**, *The Open Journal of Astrophysics*, submitted
Why Machine Learning Models Systematically Underestimate Extreme Values
209. **Y. Yang**, ..., **Y.-S. Ting**, L. Zheng. *International Conference on Computer Vision*, submitted
Effective Training Data Synthesis for Improving MLLM Chart Understanding
208. **B. Chen**^{*}, M. Orkney, **Y.-S. Ting**, & M. Hayden, *The Open Journal of Astrophysics*, submitted
Discovery of A Starburst in the Early Milky Way at $[Fe/H] < -2$
207. **J. Li**^{*}, **Y.-S. Ting**, et al., *The Astrophysical Journal*, submitted
Identification of 30,000 White Dwarf-Main Sequence Binaries Candidates from Gaia DR3 BP/RP(XP) Low-Resolution Spectra
206. T. de Haan, **Y.-S. Ting**, & Team AstroMLab, *Scientific Reports*, submitted
AstroMLab 3: Achieving GPT-4o Level Performance in Astronomy with a Specialized 8B-Parameters Large Language Model
205. **C. O'Neill**^{*}, **Y.-S. Ting**, et al., *Intelligent Computing*, submitted
Steering Language Generation: Harnessing Contrastive Expert Guidance and Negative Prompting for Coherent and Diverse Synthetic Data Generation
204. **M. Craigie**^{*} P. Taylor, **Y.-S. Ting**, et al., *Physical Review D*, submitted
Unsupervised Searches for Cosmological Parity Violation: Improving Detection Power with the Neural Field Scattering Transform
203. **J. Yu**^{*}, **Y.-S. Ting**, et al., *Monthly Notices Royal Astronomical Society*, in-press.
C3PO IV: Co-natal Stars Depleted in Refractories are Magnetically More Active — Possible Imprints of Planets
202. S. Zhang, H. Zhang, **Y.-S. Ting**, et al., *The Astrophysical Journal*, in-press.
Half a Million M Dwarf Stars Characterized Using Domain-Adapted Spectral Analysis
201. **J. Yu**^{*}, [+14 coauthors including **Y.-S. Ting**], *Nature Astronomy*, in-press.
Enhanced Magnetic Activity in Rapidly Rotating Binary Stars
200. **Y.-S. Ting**, *Nature Astronomy*, <https://doi.org/10.1038/s41550-025-02510-0>
Artificial Intelligence Compels the Astronomy Community to Rethink Research Identity and Redefine Excellence
Read the article [here](#)
199. **Y.-S. Ting** & A. Ji, *The Open Journal of Astrophysics*, 8
Quantifying Bursty Star Formation in Dwarf Galaxies
198. **T. Rozanski**^{*}, **Y.-S. Ting**, & **M. Jablonska**^{*}, *The Astrophysical Journal*, 980, 66
TransformerPayne: Enhancing Spectral Emulation Accuracy and Data Efficiency by Capturing Long-Range Correlations
197. **Y.-S. Ting** & Team AstroMLab, *Astronomy & Computing*, 51, 100893
AstroMLab 1: Who Wins Astronomy Jeopardy!?
Notable media mention: [Nature Astronomy](#)

196. **Q. Sun***, **Y.-S. Ting**, et al., *The Astrophysical Journal Letter*, 978, 107
C3PO III: Lithium Signatures Following Planet Engulfment by Stars

— 2024 —

195. **F. Liu***, **Y.-S. Ting**, **D. Yong***, et al., *Nature*, 627, 501
At Least One in a Dozen Stars Shows Evidence of Planetary Ingestion
Read the article [here](#), ranked **top 25** of > 1000 papers published in *Nature* based on online attention.
Notable media mention: [BBC](#), [Reuter](#), [The Conversation](#), [ANU Reporter](#), [Physics World](#), [SBS](#),
[Scientific American](#), [Newscientist](#), [Physics.org](#), [Channel News Asia](#)
[Cosmos](#), [USA Today](#), [The Guardian](#), [科普中国](#)
194. **J. Liu***, B. Zhang, J. Wu, & **Y.-S. Ting**, *The Astrophysical Journal Supplementary Series*, 275, 40
Double-lined Spectroscopic Binaries from the LAMOST Low-Resolution Survey
193. **Y. Sheng***, **Y.-S. Ting**, X. Xue, J. Chang, *Monthly Notices Royal Astronomical Society*, 534, 2694
Uncovering the First-Infall History of the LMC Through Its Dynamical Impact in the Milky Way Halo
192. **Z. Sun***, **Y.-S. Ting**, et al., *Neural Information Processing Systems (NeurIPS) Workshop 2024*
Interpreting Multi-band Galaxy Observations with Large Language Model-Based Agents
Notable media mention: [Microsoft](#)
191. **R. Pan***, Team AstroMLab, & **Y.-S. Ting**, SuperComputing (SC24) AI4S Workshop 2024
AstroMLab 2: AstroLLaMA-2-70B Model and Benchmarking Specialised LLMs
190. **B. Chen***, **Y.-S. Ting**, & M. Hayden, *Publications of the Astronomical Society of Australia*, 41, e063
The Dawn is Quiet Here: Rise in $[\alpha/\text{Fe}]$ is a Signature of Massive Gas Accretion that Fueled Proto-Milky Way
189. **B. Greig***, [+10 coauthors including **Y.-S. Ting**], *Monthly Notices Royal Astronomical Society*, 533, 3312
Blind QSO Reconstruction Challenge: Exploring Methods to Reconstruct the Ly α Emission Line of QSOs
188. **B. Greig***, D. Prelogovi, Y. Qin, **Y.-S. Ting** & A. Mesinger, *Mon. Not. Royal Astron. Soc.*, 533, 2530
Inferring Astrophysical Parameters using the 2D Cylindrical Power Spectrum from Reionisation
187. **B. Greig***, D. Prelogovi, J. Mirocha, Y. Qin, **Y.-S. Ting** & A. Mesinger, *Mon. Not. Royal Astron. Soc.*, 533, 2502
Exploring the Role of the Halo Mass Function for Inferring Astrophysical Parameters During Reionisation
186. **J. Pan***, **Y.-S. Ting**, et al., International Conference ML (ICML) Workshop
The Scaling Law in Stellar Light Curves
185. **Z. Sun***, **Y.-S. Ting**, et al., International Joint Conference on Artificial Intelligence (IJCAI) AI4Research Workshop
Knowledge Graph in Astronomical Research with Large Language Models: Quantifying Driving Forces in Interdisciplinary Scientific Discovery
184. P. Sharda, **Y.-S. Ting** & N. Frankel, *Monthly Notices Royal Astronomical Society*, 532, 1
A Path Towards Constraining the Evolution of the Intersellar Medium and Outflows in the Milky Way using APOGEE
183. M. Zhang, M. Xiang, **Y.-S. Ting**, et al., *The Astrophysical Journal Supplementary Series*, 273, 19
Determining Stellar Elemental Abundances from DESI Spectra with Data-Driven Payne
182. **J. Yu***, L. Casagrande, **I. Ciucă**, **Y.-S. Ting**, et al., *Monthly Notices Royal Astronomical Society*, 530, 2953
New Evidence of Binarity in Young α -rich Turn-Off and Subgiant Stars: Fast Rotation and Strong Magnetic Activity
181. P. Taylor, **M. Craigie*** & **Y.-S. Ting**, *Physical Review D*, 109, 083518
Unsupervised Searches for Cosmological Parity-Violation I: A Investigation with Convolution Neural Networks
180. **Z. Li***, Grand, Wisnioski, Mendel, Krumholz, **Ting+**, *Monthly Notices Royal Astronomical Society*, 528, 7103
Cosmological Evolution of Metallicity Correlation Functions from the Auriga Simulations
179. **J. Pan****, **Y.-S. Ting**** & **J. Yu***, *Monthly Notices Royal Astronomical Society*, 528, 5890
Astroconformer: The Prospects of Analysing Stellar Light Curves with Transformer-Based Deep Learning Models

178. H. Hwang, **Y.-S. Ting**, S. Cheng, J. Speagle, *Monthly Notices Royal Astronomical Society*, 528, 4272
Dynamical Masses across the Hertzsprung-Russell Diagram
Notable mention: [AstroPlot of the Week](#), [Gaia Image of the Week](#)
177. E. Perkowski^{**}, **R. Pan^{**}**, **T. Nguyen^{*}**, **Y.-S. Ting⁺**, *Research Notes of the AAS*, 8, 7
AstroLLaMA-Chat: Scaling AstroLLaMA with Conversational and Diverse Datasets
Notable media mention: [Machine Learning Street Talk](#)
- 2023 —
176. D. Nguyen, **Y.-S. Ting**, T. Thompson, L. Lopez & S. Lopez, *Neural Information Processing Systems Workshop 2023*
Neural ODEs as a Discovery Tool to Characterize the Structure of the Hot Galactic Wind of M82
175. **Z. Sun^{*}**, S. Huang, J. Speagle, **Y.-S. Ting** & Z. Cai, *Neural Information Processing Systems Workshop 2023*
Zephyr: Stitching Heterogeneous Training Data with Normalizing Flow for Photometric Redshift Inference
174. **D. Yong^{*}**, **F. Liu^{*}**, **Y.-S. Ting**, et al., *Monthly Notices Royal Astronomical Society*, 526, 2181
C3PO: Towards a Complete Census of Co-moving Pairs of Stars. I. High precision stellar parameters for 250 stars
173. **I. Ciucă^{*}**, D. Kawata, **Y.-S. Ting**, et al., *Monthly Notices of the Royal Astronomical Society Letters*, 528, L122
Chasing the Impact of the Gaia-Sausage-Enceladus Merger of the Milky Way Thick Disc
Notable mention: [American Physics Society](#)
172. **Z. Sun^{*}**, **Y.-S. Ting** & Z. Cai, *The Astrophysical Journal*, 269, 4
Quasar Factor Analysis – An Unsupervised and Probabilistic Quasar Continuum Prediction Algorithm with Latent Factor Analysis
171. **T. Nguyen^{*}**, **Y.-S. Ting**, et al., International Joint Conference on Natural Language Processing
AstroLLaMA: Towards Specialized Foundation Models in Astronomy
Notable mention: [Hugging Face Daily](#)
170. **X. Zhao^{**}**, **Y.-S. Ting^{**}**, K. Diao & Y. Mao, *The Astrophysical Journal*, 526, 1699
Can Diffusion Model Conditionally Generate Astrophysical Images?
169. **Y.-S. Ting^{**}**, & **B. Sharma^{**}**, International Conference ML (ICML) Workshop
Weisfeiler-Lehman Graph Kernel Method: A New Approach to Weak Chemical Tagging
168. **T. Rozanski^{**}**, **Y.-S. Ting^{**}**, & M. Jablonska, International Conference ML (ICML) Workshop
Toward a Spectral Foundation Model: An Attention-Based Approach with Domain-Inspired Fine-Tuning and Wavelength Parameterization
167. **I. Ciucă^{**}**, **Y.-S. Ting^{**}**, S. Kruk & K. Iyer, International Conference ML (ICML) Workshop
Harnessing the Power of Adversarial Prompting and Large Language Models for Robust Hypothesis Generation in Astronomy
166. **I. Ciucă^{*}** & **Y.-S. Ting**, *Research Notes of the American Astronomical Society*, 7, 9
Galactic ChitChat: Using Large Language Models to Converse with Galactic Archaeology Literature
165. **M. Lucey^{*}**, N. Al Kharusi, K. Hawkins, **Y.-S. Ting**, et al., *Monthly Notices Royal Astronomical Society*, 523, 4049
Carbon-Enhanced Metal-Poor Star Candidates from BP/RP Spectra in Gaia DR3
164. **N. Sandford^{*}**, D. Weisz & **Y.-S. Ting**, *The Astrophysical Journal Supplementary Series*, 267, 18
Validating Stellar Abundance Measurements from Multiresolution Spectroscopy
163. **B. Greig^{*}**, **Y.-S. Ting**, & A. Kaurov, *Monthly Notices of the Royal Astronomical Society*, 519, 5288
Detecting the Non-Gaussianity of the 21-cm Signal during Reionisation with the Wavelet Scattering Transform
162. G. Green, **Y.-S. Ting** & **H. Kamdar^{*}**, *The Astrophysical Journal*, 942, 26
Deep Potential: Recovering the Gravitational Potential from a Snapshot of Phase Space

— 2022 —

161. J. Leja, J. Speagle, **Y.-S. Ting**, et al., *The Astrophysical Journal*, 936, 165
A New Census of the $0.2 < z < 3.0$ Universe, Part II: The Star-Forming Sequence

160. **I. Ciucă^{*,**}** & **Y.-S. Ting^{**}**, International Conference ML (ICML) Workshop, [spotlight presentation](#)
Unsupervised Learning for Stellar Spectra with Deep Normalizing Flows
159. **K. Tang^{*,**}** & **Y.-S. Ting^{**}**, International Conference ML (ICML) Workshop, [spotlight presentation](#)
Galaxy Merger Reconstruction with Equivariant Graph Normalizing Flows
158. **Z. Sun^{*}**, **Y.-S. Ting** & Z. Cai, International Conference ML (ICML) Workshop
An Unsupervised Learning Approach for Quasar Continuum Prediction
157. **J. Pan^{*,**}**, **Y.-S. Ting^{**}** & **J. Yu^{*}**, International Conference ML (ICML) Workshop
Astroconformer: Inferring Surface Gravity of Stars from Stellar Light Curves with Transformer
156. M. Xiang, H.-W. Rix, **Y.-S. Ting**, et al., *Astronomy & Astrophysics*, 662, 66
Stellar Labels for Hot Stars from Low-Resolution Spectra - I. the HotPayne Method and Results for 330,000 Stars from LAMOST DR6
155. **B. Greig^{*}**, **Y.-S. Ting**, & A. Kaurov, *Monthly Notices of the Royal Astronomical Society*, 513, 1719
Exploring the Cosmic 21-cm Signal from the Epoch of Reionisation Using the Wavelet Scattering Transform
154. **H. Hwang^{*}**, **Y.-S. Ting**, at al., *Monthly Notices of the Royal Astronomical Society*, 513, 754
Wide Binaries from the H3 Survey: The Thick Disk and Halo have Similar Wide Binary Fractions
153. **H. Hwang^{*}**, **Y.-S. Ting**, & N. Zakamska, *Monthly Notices of the Royal Astronomical Society*, 512, 3383
The Eccentricity Distribution of Wide Binaries and Their Individual Measurements
152. **Y.-S. Ting** & D. Weinberg, *The Astrophysical Journal*, 927, 209
How Many Elements Matter?

— 2021 —

151. **H. Kamdar^{*}**, C. Conroy, **Y.-S. Ting**, K. El-Badry, *The Astrophysical Journal*, 922, 49
Spatial and Kinematic Clustering of Stars in the Galactic Disk
150. **T. Nelson^{*}**, **Y.-S. Ting**, K. Hawkins, A. Ji, H. Kamdar, K. El-Badry, *The Astrophysical Journal*, 921, 118
Distant Relatives: The Chemical Homogeneity of Comoving Pairs Identified in Gaia
149. Greene, Lancaster, **Ting**, Koposov, Danieli, Huang, Jiang, Greco, Strader, *The Astrophysical Journal*, 917, 17
A Search for Wandering Black Holes in the Milky Way with Gaia and DECaLS
148. L. Spina, **Y.-S. Ting**, N. Frankel, et al., *Monthly Notices of the Royal Astronomical Society*, 503, 3279
The GALAH Survey: Tracing the Galactic Disc with Open Clusters
147. M. Xiang, H.-W. Rix, **Y.-S. Ting**, et al., *The Astrophysical Journal Supplement Series*, 253, 22
Data-Driven Spectroscopic Estimates of Absolute Magnitude, Distance, and Binarity Method and Catalog of 16,002 O- and B-type Stars from LAMOST
146. **H. Hwang^{*}**, **Y.-S. Ting**, K. Schlaufman, N. Zakamska, *The Astrophysical Journal*, 501, 4329
The Non-Monotonic, Strong Metallicity Dependence of the Wide-Binary Fraction
145. **T. O'Briain^{*}**, **Y.-S. Ting**, S. Fabbro, K. Yi, K. Venn, S. Bialek, *The Astrophysical Journal*, 906, 130
Cycle-StarNet: Bridging the Gap between Theory and Data by Leveraging Large Data Sets

— 2020 —

144. **S. Cheng^{*}**, **Y.-S. Ting**, B. Menard, J. Bruna, *Monthly Notices of the Royal Astronomical Society*, 499, 5902
A New Approach to Observational Cosmology using the Scattering Transform
awarded the [International Astrostatistics Association Award](#) - for an outstanding publication
143. G. Green & **Y.-S. Ting**, *Neural Information Processing Systems (NeurIPS) Workshop 2020*
Deep Potential: Recovering the Gravitational Potential from a Snapshot of Phase Space
142. **S. Gilda^{*}**, **Y.-S. Ting**, et al., *Neural Information Processing Systems (NeurIPS) Workshop 2020*
Astronomical Image Quality Prediction based on Environmental and Telescope Operating Conditions

141. **Naidu***, Conroy, Bonaca, Johnson, **Y.-S. Ting**, Caldwell, Zaritsky, Cargile, *The Astrophysical Journal*, 901, 48
Evidence from the H3 Survey that the Stellar Halo is entirely Comprised of Substructure
IOP Publishing Top Cited Paper Award - one of the most cited papers from North America (2020-22)
140. **L. Lancaster***, J. Greene, **Y.-S. Ting**, S. Koposov, B. Pope, R. Beaton, *The Astronomical Journal*, 160, 125
A Mystery in Chamaeleon: Serendipitous Discovery of a Galactic Symbiotic Nova
Notable media mention: **AAS Nova**
139. M. Xiang, H.-W. Rix, **Y.-S. Ting**, et al., *The Astrophysical Journal*, 898, 28
Chemically Peculiar A and F Stars with Enhanced s-Process and Iron-Peak Elements: Stellar Radiative Acceleration at Work
138. **N. Sandford***, D. Weisz & **Y.-S. Ting**, *The Astrophysical Journal Supplement Series*, 249, 24
Forecasting Chemical Abundance Precision for Extragalactic Stellar Archaeology
137. **T. O'Briain***, **Y.-S. Ting**, S. Fabbro, K. Yi, K. Venn, S. Bialek, International Conference ML (ICML) Workshop
Interpreting Stellar Spectra with Unsupervised Domain Adaptation
136. **N. Frankel***, J. Sanders, **Y.-S. Ting**, H.-W. Rix, *The Astrophysical Journal*, 896, 15
Keeping it Cool: Much Orbit Migration, yet Little Heating, in the Galactic Disk
the **Ernst Patzer Prize** - the best publication by a young Max Planck Institute for Astronomy scientist
135. **M. Lucey***, **Y.-S. Ting**, N. Ramachandra, K. Hawkins, *Monthly Notices Royal Astronomical Society*, 495, 3087
From the Inner to Outer Milky Way: a Photometric Sample of 2.6 Million Red Clump Stars
134. K. Hawkins, M. Lucey, **Y.-S. Ting**, et al., *Monthly Notices of the Royal Astronomical Society*, 492, 1164
Identical or Fraternal Twins? The Chemical Homogeneity of Wide Binaries from Gaia DR2
133. **J. Lin***, M. Asplund, **Y.-S. Ting**, et al. *Monthly Notices of the Royal Astronomical Society*, 491, 2043
The GALAH Survey: Temporal Chemical Enrichment of the Galactic Disc
- 2019 —
132. M. Xiang, **Y.-S. Ting**, H.-W. Rix, et al., *The Astrophysical Journal*, 245, 34
Abundance Estimates for 16 Elements in 6 Million Stars from LAMOST DR5 Low-Resolution Spectra
131. **H. Kamdar***, C. Conroy, **Y.-S. Ting**, A. Bonaca, M. Smith, A. Brown, *The Astrophysical Journal Letters*, 884, L42
Stars that Move Together Were Born Together
130. **H. Kamdar***, C. Conroy, **Y.-S. Ting**, A. Bonaca, B. Johnson, P. Cargile, *The Astrophysical Journal*, 884, 173
A Dynamical Model for Clustered Star Formation in the Galactic Disk
129. **N. Frankel***, J. Sanders, H.-W. Rix, **Y.-S. Ting**, M. Ness, *The Astrophysical Journal*, 884, 99
The Inside-Out Growth of the Galactic Disk
128. **M. Kovalev***, M. Bergemann, **Y.-S. Ting**, H.-W. Rix, *Astronomy & Astrophysics*, 728, 54
Non-LTE Chemical Abundances in Galactic Open and Globular Clusters
127. **Y.-S. Ting**, C. Conroy, H.-W. Rix, P. Cargile, *The Astrophysical Journal*, 879, 69
The Payne: Self-Consistent Ab Initio Fitting of Stellar Spectra
126. **Y.-S. Ting** & H.-W. Rix, *The Astrophysical Journal*, 878, 21
The Vertical Motion History of Disk Stars throughout the Galaxy
- 2018 —
125. **N. Frankel***, H.-W. Rix, **Y.-S. Ting**, M. Ness, D. Hogg, *The Astrophysical Journal*, 865, 96
Measuring Radial Orbit Migration in the Galactic Disk
124. J. Choi, C. Conroy, **Y.-S. Ting**, A. Dotter, *The Astrophysical Journal*, 863, 65
Star Cluster Ages in the Gaia Era
123. **Y.-S. Ting**, C. Conroy, H.-W. Rix, M. Asplund, *The Astrophysical Journal*, 860, 159
Measuring Oxygen Abundances from Stellar Spectra without Oxygen Lines

122. **Y.-S. Ting**, K. Hawkins & H.-W. Rix, *The Astrophysical Journal Letters*, 858, L7
*A Large and Pristine Sample of Standard Candles across the Milky Way:
~ 100 000 Red Clump Stars with 3% Contamination*
121. **J. Lin***, A. Dotter, **Y.-S. Ting**, M. Asplund, *Monthly Notices of the Royal Astronomical Society*, 477, 2606
*Stellar Ages and Masses in the Solar Neighbourhood: Bayesian Analysis
using Spectroscopy & Gaia DR1 Parallaxes*
120. **K. El-Badry***, **Y.-S. Ting**, H.-W. Rix, et al., *Monthly Notices of the Royal Astronomical Society*, 476, 528
Discovery and Characterization of 3000+ Main-Sequence Binaries from APOGEE Spectra
119. K. Hawkins, **Y.-S. Ting** & H.-W. Rix, *The Astrophysical Journal*, 853, 20
Photospheric Diagnostics of Core Helium Burning in Giant Stars
118. M. Krumholz & **Y.-S. Ting**, *Monthly Notices of the Royal Astronomical Society*, 475, 2236
Metallicity Fluctuation Statistics in the Interstellar Medium and Young Stars - I. Variance and Correlation
117. **K. El-Badry***, H.-W. Rix, **Y.-S. Ting**, et al., *Monthly Notices of the Royal Astronomical Society*, 473, 5043
Signatures of Unresolved Binaries in Stellar Spectra: Implications for Spectral Fitting

— 2017 —

116. **Y.-S. Ting**, H.-W. Rix, C. Conroy, A. Ho, J. Lin, *The Astrophysical Journal Letters*, 849, L9
Measuring 14 Elemental Abundances with $R = 1800$ LAMOST Spectra
115. **Y.-S. Ting**, C. Conroy, H.-W. Rix, P. Cargile, *The Astrophysical Journal*, 843, 32
Prospects for Measuring Abundances of > 20 Elements with Low-resolution Stellar Spectra

— 2016 —

114. H.-W. Rix, **Y.-S. Ting**, C. Conroy, D. Hogg, *The Astrophysical Journal Letters*, 826, L25
Constructing Polynomial Spectral Models for Stars
113. **Y.-S. Ting**, C. Conroy & H.-W. Rix, *The Astrophysical Journal*, 826, 83
Accelerated Fitting of Stellar Spectra
112. **Y.-S. Ting**, C. Conroy & H.-W. Rix, *The Astrophysical Journal*, 816, 10
APOGEE Chemical Tagging Constraint on the Maximum Star Cluster Mass in the α -Enhanced Galactic Disk

— 2015 and earlier —

111. **Y.-S. Ting**, C. Conroy & A. Goodman, *The Astrophysical Journal*, 807, 104 (2015)
Prospects for Chemically Tagging Stars in the Galaxy
110. **Y.-S. Ting**, H.-W. Rix, J. Bovy, G. van de Ven, *Monthly Notices of the Royal Astronomical Society*, 434, 652 (2013)
*Constraining the Galactic Potential via Action-Based Distribution Functions
for Mono-Abundance Stellar Populations*
109. **Y.-S. Ting**, G. De Silva, K. Freeman, S. Parker, *Monthly Notices of the Royal Astronomical Society*, 427, 882 (2012)
High-Resolution Elemental Abundance Analysis of the Open Cluster IC 4756
108. S. Shabala, **Y.-S. Ting**, S. Kaviraj, et al., *Monthly Notices of the Royal Astronomical Society*, 423, 59 (2012)
Galaxy Zoo: Dust Lane Early-Type Galaxies are Tracers of Recent, Gas-Rich Minor Mergers
107. S. Kaviraj, **Y.-S. Ting**, M. Bureau, et al., *Monthly Notices of the Royal Astronomical Society*, 423, 49 (2012)
Galaxy Zoo: Dust and Molecular Gas in Early-Type Galaxies with Prominent Dust Lanes
106. **Y.-S. Ting**, K. Freeman, C. Kobayashi, et al., *Monthly Notices of the Royal Astronomical Society*, 421, 1231 (2012)
Principal Component Analysis on Chemical Abundances Spaces

— Refereed Publications - Other Contributions —

— 2025 —

105. M. Zhang, et al., *The Astrophysical Journal*, submitted
Homogeneous Stellar Atmospheric Parameters and 22 Elemental Abundances for Six Million FGK Stars Derived From LAMOST Low-resolution Spectra with DD-PAYNE
104. J. Kollmeier, [+215 coauthors including **Y.-S. Ting**], *The Astronomical Journal*, submitted
Sloan Digital Sky Survey-V: Pioneering Panoptic Spectroscopy
103. F. Cappello, [+24 coauthors including **Y.-S. Ting**], *International Journal of HPC Applications*, submitted
Establishing a Methodology to Evaluate Large Language Models as Scientific Research Assistants
102. X. Han, H. Wang, G. Carraro, M. Lopez-Corredoira, **Y.-S. Ting**, et al., *The Astrophysical Journal*, submitted
The Structure, Populations and Kinematics of the Milky Way Central and Inner Bulge with OGLE, APOGEE and Gaia Data
101. C. Conroy, [+14 coauthors including **Y.-S. Ting**], *The Open Journal of Astrophysics*, submitted
Birth of the Galactic Disk Revealed by the H3 Survey
100. R. Emami, [+16 coauthors including **Y.-S. Ting**], *Publications of the Astronomical Society of Australia*, submitted
Unraveling the Role of Merger Histories in the Population of In Situ Stars: Linking TNG Simulation to H3 Survey
99. J. Han, [+6 coauthors including **Y.-S. Ting**], *The Astrophysical Journal Letters*, submitted
Our Halo of Ice and Fire: Strong Kinematic Asymmetries in the Galactic Halo
98. V. Chandra, [+13 coauthors including **Y.-S. Ting**], *The Astrophysical Journal*, submitted
All-Sky Kinematics of the Distant Halo: The Reflex Response to the LMC
97. Y. Li, A. Ji, R. Ezzeddine, Y. Yao, **Y.-S. Ting**, et al., *The Astrophysical Journal*, submitted
*NoPayne: Full Non-LTE Stellar Spectral Emulator
I. Methods and application on Gaia-ESO Benchmark Stars*
96. A. Myszkka, [+13 coauthors including **Y.-S. Ting**], *Monthly Notices of the Royal Astronomical Society*, submitted
*Calibrating the Chemical Content of Galaxies with the SAMI Zoom Survey:
A Data Release of 92 Spatially Resolved HII Regions in Nearby Galaxies*
95. J. Speagle, [+21 coauthors including **Y.-S. Ting**], *The Astrophysical Journal*, submitted
Deriving Stellar Properties, Distances, and Reddenings using Photometry and Astrometry with brutus
94. T. Woody, [+8 coauthors including **Y.-S. Ting**], *The Astrophysical Journal*, 978, 152
The Rapid Formation of the Metal Poor Milky Way
93. Q. Sun, S. Wang, T. Gan, C. Ji, Z. Liu, **Y.-S. Ting**, et al., *The Astrophysical Journal*, 980, 179
Planets Around Solar Twins/Analogues (PASTA) I.: High Precision Stellar Chemical Abundance for 17 Planet-Hosting Stars and the Condensation Temperature Trend
- 2024 —
92. K. Iyer, [+29 coauthors including **Y.-S. Ting**], *The Astrophysical Journal Supplementary Series*, 275, 38
pathfinder: A Semantic Framework for Literature Review and Knowledge Discovery in Astronomy
91. Q. Lin, [+8 coauthors including **Y.-S. Ting**], *Astronomy & Astrophysics*, 691, A331
CLAP-I: Resolving Miscalibration for Deep Learning-Based Galaxy Photometric Redshift Estimation
90. J. Lee, [+8 coauthors including **Y.-S. Ting**], *The Astrophysical Journal*, 975, 38
Inferring Cosmological Parameters on SDSS via Domain-Generalized Neural Networks and Lightcone Simulations
89. G. Wang, H. Wang, Y. Luo, **Y.-S. Ting**, et al., *The Astrophysical Journal*, 974, 219
Galactic-Seismology Substructures and Streams Hunter with LAMOST and Gaia. I. Methodology and Local Halo Results
88. J. Speagle, [+21 coauthors including **Y.-S. Ting**], *The Astrophysical Journal*, 970, 121
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