

MING-FENG HO (何銘峰)

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CURRENT POSITION

- Postdoctoral Fellow in the Leinweber Center for Theoretical Physics, University of Michigan 2024 Sept -
Mentor: Camille Avestruz

EDUCATION

- Ph.D. student in Physics & Astronomy, University of California, Riverside 2018 - 2024 Aug
Research advisor: Prof. Simeon Bird
Thesis: Model-driven cosmology with Bayesian machine learning and population inference
- M.S. in Astrophysics, National Taiwan University 2016 - 2018
- B.S. in Physics, National Taiwan University 2010 - 2014

RESEARCH INTERESTS


- **Cosmology:** Cosmological inference, hydrodynamical simulations, IGM as a cosmological probe.
- **Bayesian statistics:** Gaussian process, multi-fidelity, hierarchical inference, Bayesian deep learning.
- **IGM/CGM:** Damped Ly α absorbers (DLAs), metal absorbers, quasar emission modeling, redshift inference.
- **Black holes:** Population inference for gravitational waves, primordial black holes (PBHs).

AWARDS AND GRANTS


1. NASA FINESST Fellowship 2021 - 2024
2. Anne Kernan Award (Outstanding Senior Graduate Student Researcher), UC Riverside 2023
3. Provost's Scholars Fellowship (honored), UC Riverside 2021
4. Benjamin C. Shen Award (Outstanding Junior Graduate Student Researcher), UC Riverside 2021
5. GSA Conference Travel Award, UC Riverside 2019
6. Student Thesis Award, Physics Society of Taiwan 2019
7. Dean's Fellowship, UC Riverside 2018
8. Laureate for Philosophical Treatise, National Taiwan University 2012

RESEARCH MENTORSHIP

Advisor for UCR/UCLA undergraduates advised by Prof. Simeon Bird

- Kevin Hong (co-advised with Sum Qezlou): Animating the evolution of universe using Blender  Video] 2022
- Ryan Tsaio: Automated detection of Lyman limit systems 2023

Research advisor for King's high school students

- Emma Shah (now UC Berkeley; co-advised with Phoebe R. Upton Sanderbeck): DLA spatial separation on the detection pipeline 2020 - 2021
- Emma Shah and Rafael Rosales: A better prior for QSO redshift estimation ( jibanCat/gpy_dla_detection, Gold medal in the county-level science fair) 2021 - 2022

Team Lead for Data Science Challenge, Lawrence Livermore National Laboratory

PUBLICATION

Summary

- 15 publications, 15 refereed (114 total citations; Google scholar 09/17/2024).
- 5 first-author publications (80 total citations).
- 3 second-author publications with major contributions (involving writing and software development).
- 3 third-author publications with important software contributions.
- 4 collaboration papers.

SCIENTIFIC PRESENTATIONS

Summary

- 20 talks, posters and presentations since 2019
- 6 remote talks, 8 in-person seminar talks, 1 poster, 5 conference talks

Selected Talks

- *Invited Talk: CfA Seminar (topic: Multi-fidelity emulators and cosmological constraints)* Nov 2023
- *Invited Talk: IPMU APEC seminar (topic: PRIYA emulator using Astrid simulations)* Oct 2023
- *Contributed Talk: Royal Astronomical Society 1D ML (topic: GP-DLA finder)* [YouTube Video] Mar 2023
- *Contributed Tutorial: KITP Galaxy ML Workshop (topic: GP emulator)* Feb 2023
- *Invited Talk: KICP seminar (topic: MF emulator)* Jan 2023
- *Contributed Talk: CCA's CAMELS Workshop (topic: MF emulator using Astrid)* Nov 2022

SERVICE

Selected service

- Referee for Physical Review D, Astrophysical Journal, and MNRAS 2021 - present
- P&A PeER Mentorship (PAPER) Leader 2023 - present
- P&A Student Seminar (PASS) Founder 2022 - 2023
- Head Steward (Riverside), UAW 2865 2021 - 2022
- UC Astronomy Osterbrock Sierra Conference Co-I 2021

PUBLIC OUTREACH

1. UCR's Stargazing Series Presenter and Moderator (× many times) [YouTube Video] 2020 - 2021
2. UCR's Mercury Transit Presenter (hands-on demos) 2019

WORKING EXPERIENCE

Research Assistant for Digital Humanities

Taipei, Taiwan

- Text mining for digital humanities, working at Academia Sinica, Chinese literature and Philosophy 2018

Magazine Editor/Freelance Writer

Taipei, Taiwan

- Editing for Little Newton, and also writing literature, receiving the nation-wide Hakka literature award 2015

Taiwanese Military Service

Keelung, Taiwan

- Digitalize historical court records 2014 - 2015

OTHER SKILLS

- Languages: Mandarin (native), English, Japanese (limited listening/reading), Taiwanese (limited listening)