Ming-Yi, Lin

E-mail: acdo2002@gmail.com
Github:
https://github.com/acdo2002 (Software Engineer)
https://github.com/acdo2002-sci (Scientific code)

Work Experiences

University of Toledo, Ohio, USA **Sep 2024 - Present**
Postdoctoral Researcher
PI: Prof. Anne Medling

- NSF Project: Direct Tests of Black Hole Accretion Rate Prescriptions
- Become NASA AGN SIG Leadership Council

Academia Sinica Institute of Astronomy and Astrophysics (ASIAA) **Feb 2020 - Aug 2024**
National Taiwan University, Taiwan
Project support staff - Software Engineer
PI: Dr. Chin-Fei Lee

- Develop the automatically tests (integration tests) for the astronomical visualization software CARTA
- GitHub Actions, Continuous Integration/Continuous Deployment (CI/CD), Stand-alone Packages

Academia Sinica Institute of Astronomy and Astrophysics (ASIAA) **July 2018 - Jan 2020**
National Taiwan University, Taiwan/Hawaii, USA
Postdoctoral Researcher
PI: Dr. Patrick Koch

- Commission tests and operations with Yuan-Tseh Lee Array (YTLA) on Mauna Loa

Kavli Institute for Astronomy and Astrophysics (KIAA) **Nov 2017 - Jun 2018**
Peking University (PKU), China
BHOLE fellow
PI: Prof. Yingjie Peng

- Study stellar kinematics asymmetry of nearby galaxies and AGNs

Research & Education Background

Ludwig-Maximilian University of Munich (LMU), Germany
Max-Planck-Institut für Physik (MPE), Infrared Group
Doctor of Philosophy (PhD), Department of Physics **Aug 2013 - Oct 2017**
Thesis: Gas flows and Stars in Nuclear Regions of Nearby Seyfert Galaxies
Supervisors: Dr. Ric Davies & Prof. Reinhard Genzel
Thesis committee: Dr. Eckhard Sturm & Dr. Linda Tacconi

National Taiwan Normal University (NTNU), Taiwan

Master of Science (M.S.), Department of Earth Sciences, Astronomy Group **2010-2013**
Thesis: The Properties of AGN in Ultra/luminous Infrared Galaxies
Supervisors: Prof. Yasuhiro Hashimoto & Prof. Sebastien Foucaud

Princeton University, USA **Sep 2012**
Visiting Master Student
Topic: Measuring the black hole mass of INTEGRAL-selected AGNs
Supervisor: Prof. Jenny Greene

National Taiwan Normal University (NTNU), Taiwan
Bachelor of Science (B.S.), Department of Earth Sciences & Physics **2006-2010**

Academia Sinica Institute of Astronomy and Astrophysics, Taiwan **2008**
Undergraduate Summer Student (REU equivalent)
Topic: Expanding molecular gas around the post-AGB star with Submillimeter Array (SMA)
Supervisor: Dr. Chin-Fei Lee

Research Interests

Supermassive black hole, active galactic nuclei and nuclear star formation, multi-wavelength observations and instrumental/software/pipeline development & testing

Astronomical Observation and Calibration Experiences

• Near-infrared:
- Keck - OSIRIS instrument with remote observation (scheduled in 31 Oct 2025), have improved mosaic stacking algorithm (forked repository from official pipeline) to fit our NSF Project.
- Very Large Telescope (VLT) – SINFONI instrument: Co-PI of large program; my works include preparing the observation blocks (OBs), reducing the data and improving the calibration pipeline (with differential atmospheric correction). Assisted other successful proposals to prepare observations and calibrate the data (Prof. Jenny Greene's approved SINFONI program).

• Optical:
- Large Binocular Telescope (LBT): Completed six days observations that included assisting the observing program execution, assessing weather condition, communicating with LBTO staff.

• Millimeter/Submillimeter:
- Institut de Radioastronomie Millimetrique (IRAM) – NOEMA interferometer with PolyFix instrument: **PI 8-hours observation completed**
- Submillimeter Array (SMA): Completed one night observation and doing data reduction for summer student project "Search For Methanol at z=0.89"
- Yuan-Tseh Lee Array (YTLA) – 7 small dishes interferometer: Assisting day and night time observing and helping the engineers to test the radio backend.

Certification

• The International Software Testing Qualifications Board (ISTQB), USA
  Certified Tester, Foundation level (May 5 2022)
• Japanese-Language Proficiency Test: N2 (Aug 2022) & N3 (Feb 2020)

Computer Skills

• Programming:
  - Python 3 including CPython (after PhD, I am working with several astronomical python3 packages, e.g. Astropy, Matplotlib, NumPy, SciPy, Pandas, Jupyter, DYSMALPY, CIGALE, and Bokeh…etc)
  - Shell Scripts (setting the automatic pipeline to measure the software quality assurance. e.g. performance regression tests)
  - Fortran 90 (first language in Metrology undergraduate study)
  - MATLAB (mostly using in Physics undergraduate research)
  - IDL (mostly using in master and PhD research)
  - JavaScript/TypeScript (was leading the integration tests with RxJS/JEST and developing the CARTA frontend with REACT frameworks)
  - C (for the basic images calibrations) & C++ (can write/compile easy code, mostly is build the C++ unit tests and measure the performance in different operation systems)
• Containerization & Stand-alone package:
  - Native MacOS package builts & Linux Docker Container package builts
  - Docker Container for very old VLT raw data reduction (source code written in 2002 + Python2)
  - Kubernetes (K8S): attended workshop and set up in the google cloud compute engine
• Database:
  - Using non-SQL (mongoDB for CARTA Telemetry)
  - Wiki management member of Taiwan Extragalactic Astronomical Data Center (2011-2013)
• Web related: html, CSS, and automatically UI browser testing packages (Selenium & Cypress)

Scholarships, Awards, and Grants

- AAS International Travel Grant ($1176.31 USD) between US and Germany 2025
- PhD Fellowship, International Max Planck Research School (IMPRS), Germany 2013 - 2017
  Full scholarship with comprehensive benefits, including retirement contributions and flights between Germany and Taiwan
- IAU Travel Grant from National Science Council, Taiwan (25k NTD) 2012
- IAU Travel Grant from Department of Earth Sciences, NTNU, Taiwan (15k NTD) 2012
- The Best Poster Prize at the Annual Physical Society of Taiwan (3k NTD) 2012
- The student scholarship of graduated student at NTNU (10k NTD) 2012
- Member of The Phi Tau Phi Scholastic Honor Society of Taiwan (Honor) 2012
- The student scholarship of undergraduate student at NTNU (10k NTD) 2008
- The Presidential award at NTNU (10k NTD) 2007

Lectures

• University of Toledo REU lecture: July 2025

Giving “Version Control: How we manage software properly” to undergrad/grad students
University of Toledo, Ohio, USA

• ASIAA internal student series lectures: April-May 2019
Giving 4 hours (total 4 weeks) “Active Galactic Nuclei: How we measure supermassive black hole mass” to undergrad/grad students
National Taiwan University, Taipei, Taiwan