
Name & Contacts

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About Me

I am a 4 year Astronomy & Physics specialist at the University of Toronto. I have research interests in the fields of Solar Physics, Star Evolution, Formation and Astro-fusion processes. I am a disciplined and fast learner looking to explore more fields in Astronomy and Astrophysics. I intend to work toward a teaching professor role and actively participate in outreach.

Experience

University of Toronto / Part-Time Research Assistant

September 2023 - PRESENT

Under the guidance of Prof. Rachel Friesen, I utilized machine learning packages to analyze star formation regions, identifying and categorising regions of organic molecules in such regions, future work include using chemical energetics of such molecules to probe relative velocities.

Tutor Doctor / Part-Time Tutor

September 2022 - PRESENT

Tutored high school students in Math and Physics, recognized as Tutor of the Month in June 2023 for exceptional student performance and feedback.

Physics Student Union / Treasurer

May 2024 - PRESENT

Involved in budgeting, looking for sponsors and processing reimbursements for the Student Union. As well as planning outreach events for the student body. Updated the reimbursement process to streamline processes and simplify procedures to satisfy auditing needs

Singapore Armed Forces / Combat Medic

October 2019 - June 2021

Operated as the primary triage medic at the camp's medical centre, efficiently assessing and prioritizing 60-80 patients a day. Volunteered for the COVID-19 triage team, assessing and managing the health of 400 foreign workers relocated to an army base. Honoured with the COVID-19 Resilience Medal for outstanding contributions to the triage and care of relocated foreign workers during the pandemic.

Boys' Brigade Singapore / Volunteer Officer

August 2013 - June 2021

Graduated from the programme in 2016 as a beneficiary myself I completed officer cadet training and was promoted to officer in 2018, demonstrating leadership and commitment to the Boys' Brigade Singapore programme. My main responsibilities include planning and conducting weekly lessons on citizenship and life skills, positively impacting the development and leadership abilities of young boys. Created a safe and supportive environment for young boys, fostering their physical, emotional, and leadership development through structured activities and guidance

Experience (Continued)

Astrotours / Volunteer

August 2022 - Present

Regularly involved as a volunteer for Astrotours, a monthly outreach program planned by Astronomy Graduate students from the University of Toronto. Introduced the faculty's telescope or demonstrations to an average of 100 visitors every event answering questions and introducing the public to the world of Astronomy.

Education

University of Toronto / Astronomy & Physics

September 2021 - June 2025

Notable courses taken include: AST399Y1 Research Opportunity Programme, Designed 2 Astronomy labs for undergraduate Astronomy courses under the supervision of Prof. Lea Hirsch at the University of Toronto Mississauga. CTA200H1 Computing in Astrophysics, learnt how to use Git, access cloud computing, Monte Carlo methods and more.

Future notable courses: AST425Y1 Research Topic in Astronomy and Astrophysics, intend to continue my project from my research position and work towards publication. AST431Y1 Supervised Study in Astronomy & Astrophysics, will be learning more on nuclear processes in Astronomical settings.

Catholic Junior College / S-C GCE 'A' Levels

Selected to participate in the National University of Singapore Science Research Programme as a Higher 3 course for 'A' Levels. Worked on a thesis on Modified Energy Dispersion Relations in Neutrino Oscillations

Awards

ACE UTSG stock market challenge / ACE UTSG

August 2023: 2nd Placing

Chinese Professional Society Student Challenge / Chinese Professional Society

August 2023: Semi-Finalist

Global Learning Case Competition / University of Toronto

February 2023: 1st Placing

PYJAC 2022 / University of Toronto Mississauga WiSC

January 2022: 1st Placing in Beginner Category

UEC Case Competition / University of Toronto Mississauga Undergraduate Economic Council

October 2021: 1st placing

February 2022: 4th placing

October 2022: 2nd placing

October 2023: 2nd placing

Associated Works and Projects

Photometry of Type II Supernova SN 2023ixf with a Worldwide Citizen Science Network DOI: [10.3847/2515-5172/ace41f](https://doi.org/10.3847/2515-5172/ace41f)

Longitude Latitude finder tool as part of Astronomy lab designed for undergraduates <https://raw.githubusercontent.com/ruyixu00/Lat-Long-Finder/main/index.html>

Project from PYJAC 2022, "BLOOP" <https://github.com/ruyixu00/Bloop>

Thesis on Modified Dispersion Relations in Neutrino Oscillations https://ruyixu00.github.io/SRP_Paper.pdf