Jianing (Jenny) Su

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EDUCATION

PhD (direct entry) in Astronomy and Astrophysics · 2023 - Present
University of Toronto, Toronto, ON, Canada

BSc in Physics · 2019 - 2023
McGill University, Montréal, QC, Canada

- Minor in Mathematics

AWARDS AND SCHOLARSHIPS

David A. Dunlap Entrance Scholarship ($3000) · 2023
University of Toronto

Undergraduate Student Research Award ($6000) · 2022
Natural Sciences and Engineering Research Council of Canada (NSERC)

NSERC Scholarship Supplements ($1500) · 2022
Fonds de recherche du Québec - Nature et Technologies

Science Tomlinson Engagement Award for Mentoring ($600) · 2021, 2022
McGill University, Montréal, QC, Canada

Arthur and Crystal Lau Entrance Scholarship in Science ($3000) · 2019
McGill University, Montréal, QC, Canada

UNDERGRADUATE RESEARCH EXPERIENCE

Undergraduate Thesis · Sep 2022 – Apr 2023
McGill University, Montréal, QC, Canada

- Supervisor: Professor Victoria Kaspi
- Adjust the script of the Canadian Hydrogen Intensity Mapping Experiment Fast Radio Burst (CHIME/FRB) polarization pipeline to apply on a morphologically complex sample of FRBs
- Understand and improve the CHIME/FRB polarization pipeline, which helps to determine accurate rotation measure values

Summer Research Project · May 2022 – Aug 2022
McGill University, Montréal, QC, Canada

- Title: Comparison of Repeating and Non-Repeating Fast Radio Burst Events Detected by CHIME/FRB
- Supervisors: Professor Victoria Kaspi and Dr. Ryan Mckinven
- Developed Python scripts that perform a series of cuts to filter out undesired FRBs
- Applied two-sample comparison analyses and programmed R codes to apply survival analysis on censored data

Majors Research Project · Jan 2022 – Apr 2022
McGill University, Montréal, QC, Canada

- Title: Depolarization of Fast Radio Bursts Detected by CHIME/FRB
- Supervisors: Professor Victoria Kaspi and Dr. Ryan Mckinven
- Analyzed a sample of bright FRBs using frequency-dependent depolarization models
- Examined polarization distributions between repeating and non-repeating FRBs to better understand the emission mechanisms and preferred environments of FRB sources

Publication and Preprints

[1] CHIME/FRB Collaboration et al. "CHIME/FRB Discovery of 25 Repeating Fast Radio Burst Sources". In: (2023). DOI: 10.48550/ARXIV.2301.08762. URL: https://arxiv.org/abs/2301.08762.

[2] Jakob T. Faber et al. *Morphologies of Bright Complex Fast Radio Bursts with CHIME/FRB Voltage Data*. 2023. arXiv: 2312.14133 [astro-ph.HE].

[3] R. Mckinven et al. "A Large-scale Magneto-ionic Fluctuation in the Local Environment of Periodic Fast Radio Burst Source FRB 20180916B". In: *The Astrophysical Journal* 950.1 (June 2023), p. 12. DOI: 10.3847/1538-4357/acc65f. URL: https://dx.doi.org/10.3847/1538-4357/acc65f.

[4] R. Mckinven et al. "Revealing the Dynamic Magnetoionic Environments of Repeating Fast Radio Burst Sources through Multiyear Polarimetric Monitoring with CHIME/FRB". In: 951.1 (July 2023), p. 82. DOI: 10.3847/1538-4357/acd188. URL: https://dx.doi.org/10.3847/1538-4357/acd188.

[5] J. Su. "Lunar Ultraviolet Spectroscopy". In: *Encyclopedia of Lunar Science*. Ed. by B. Cudnik. Springer, 2022. URL: https://doi.org/10.1007/978-3-319-05546-6%20173-1.

Talks

McGill Undergraduate Poster Showcase   2023
McGill University, Montréal, QC, Canada

McGill Undergraduate Summer Research Showcase   2022
Trottier Space Institute at McGill, Montréal, QC, Canada

Leadership & Outreach Experience

Keynote Speaker Executive   Sep 2023 - Present
University of Toronto Graduate Astronomy Students Association, Toronto, ON, Canada

- Organize annual event by inviting a speaker outside of the Astronomy & Astrophysics Department

Volunteer for Astrophysics Outreach program   Jan 2022 – May 2023
AstroMcGill, Montréal, QC, Canada

- Volunteered at astrophysics talks held by McGill's Trottier Space Institute that is open to the public
- Engaged primary school children on astrophysics-related activities

Leader of Educational Outreach in Space Club   Jan 2022 – Aug 2022
McGill Space Group, Montréal, QC, Canada

- Reached out to museums to hold space-related workshops
- Held an information booth at the McGill Space Fair to showcase current efforts in space exploration
- Organized outreach events for the club's participation in Canadian Satellite Design Challenge (SDSS) and Canadian Stratospheric Balloon Experiment Design Challenge (CAN-SBX).

Director of Events for Virtual Reality Club   Sep 2021 – Apr 2022
McGill AR/VR Association, Montréal, QC, Canada

- Planned and designed events related to augmented reality and virtual reality

Volunteer for Science Outreach Program   Jan 2020 – Aug 2021
McGill University Let's Talk Science Outreach, Montréal, QC, Canada

- Explained fun facts about science to children aged 5-12 through in-person and online workshops

Teaching Experience

Teaching Assistant: Stars and Galaxies.   Jan 2024-Present
University of Toronto, Toronto, ON, Canada
- Co-lead 4 weekly tutorials, design assignment questions, and invigilate exams

Teaching Assistant: The Sun and its Neighbours   Sep 2023-Dec 2023
University of Toronto, Toronto, ON, Canada
- Co-led 3 one-hour long weekly tutorials on introduction to astronomy

Physics Mentor   Sep 2022 – Dec 2022
McGill University, Montréal, QC, Canada
- Helped undergraduate students in a 500 students classical mechanics course understand topics they found difficult
- Provided guidance to students who were having trouble with their assignments

Statistics Grader   Sep 2022 – Dec 2022
McGill University, Montréal, QC, Canada
- In charge of grading statistics assignments for 50 students

Calculus Mentor   Jan 2021 – Apr 2021
McGill University, Montréal, QC, Canada
- Assisted students one-on-one in a 200 people class when they have difficulty understanding Calculus II concepts

Tutor at Literacy Organization   Sep 2019 – Feb 2020
McGill University Frontier College, Montréal, QC, Canada
- Tutored 10 under-privileged students in a group setting of on mathematics and science

Skills

Coding: Python, R, SQL, MATLAB
Languages: English, Mandarin