

Utkarsh Mali

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Canadian Institute for Theoretical Astrophysics (CITA)
LIGO Scientific Collaboration (LSC-CITA)
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EDUCATION

COMPILED ON OCTOBER 23, 2024

UNIVERSITY OF TORONTO	2022 - PRESENT
<i>PhD in Physics (Theoretical Astrophysics)</i>	
Supervisor: Prof. Reed Essick	
UNIVERSITY OF TORONTO	2022 - 2023
<i>MSc in Physics (Theoretical Astrophysics)</i>	
UNIVERSITY OF TORONTO, VICTORIA COLLEGE	2018 - 2022
<i>HBSc in Physics, Mathematics and Computer Science (High Distinction)</i>	

EXECUTIVE SUMMARY

Total Awards and Grants: \$51,125 CAD	Leadership/Service Roles: 10
Publications (Short Author): 3	Publications (Total): 6
Students Supervised (Research): 1	Students Mentored (General): 4

PUBLICATIONS

Complete List: [InspireHEP](#)

1. **Mali** and Essick “Striking a Chord with Spectral Sirens: multiple features in the compact binary population correlate with H_0 ”, 2024, [arXiv:2410.07416](#) (*submitted ApJ*)
2. Mohanty, **Mali**, Das, Kumar, Landry “Astrophysical constraints on neutron star f-modes with a nonparametric EoS representation”, 2024, [arXiv:2410.16689](#) (*submitted PRD*)
3. Vogel et al. (incl. **Mali**) “HERON: Demonstrating a Novel Biological Platform for Small Satellite Missions”, 2021, [SSC21-WKII](#).

+ Other [LIGO-VIRGO-KAGRA](#) Publications

AWARDS AND GRANTS

Total = \$51,125 CAD

Massey College Junior Fellowship Massey College, University of Toronto \$2,350	JULY 2024
High Performance Computing Travel Grant SciNet, University of Toronto/Georgia Institute of Technology \$3,075	JULY 2023
Summer Undergraduate Research Fellowship Canadian Institute for Theoretical Astrophysics, University of Toronto \$9,500	MAY 2022
Undergraduate Summer Training Program Centre for Global Change Science, University of Toronto \$8,500	MAY 2022 (DECLINED)
Summer Undergraduate Research Fellowship Dunlap Institute, University of Toronto \$9,400	MAY 2022 (DECLINED)

Crescam Serviendo (Leadership) Award Victoria College, University of Toronto	MARCH 2022
Summer Undergraduate Research Fellowship Dunlap Institute, University of Toronto \$9,400	MAY 2021
Summer Undergraduate Research Fellowship: Best Poster Award Dunlap Institute, University of Toronto \$50	MAY 2021
Natalia Krasnopskaia Memorial Research Fellowship University of Toronto \$3,150	JULY 2020
Undergraduate Research Grant National University of Singapore \$1,900	MAY 2020
Undergraduate Research Grant National University of Singapore \$3,800	MAY 2019

LEADERSHIP, OUTREACH, SERVICE AND VOLUNTEERING

Volunteer, Astronomy on Tap <i>Dunlap Institute for Astronomy & Astrophysics</i>	2024 - PRESENT
Volunteer, Science Rendezvous <i>Department of Physics, University of Toronto</i>	2023 - PRESENT
Volunteer, Doors Open Toronto <i>Department of Physics, University of Toronto</i>	2023 - PRESENT
Volunteer, AstroTours <i>Dunlap Institute for Astronomy & Astrophysics</i>	2023 - PRESENT
Member, Graduate Liaison Committee <i>Department of Physics, University of Toronto</i>	2023 - 2024
Student Member, ISE Advisory Committee <i>Centre for International Experience, University of Toronto</i>	2023 - 2024
PhD Representative, Library Committee <i>Department of Physics</i>	2023 - 2024
Curriculum Developer, AoU Workshop <i>Dunlap Institute for Astronomy & Astrophysics</i>	SUMMER 2023
Juror, Canadian Young Physicist Tournament (CaYPT) <i>STEM Fellowship Charity</i>	2022 - 2024
President, International Mentorship Program (VCIM) <i>Victoria College, University of Toronto</i>	2018 - 2022
E-Mentor, Vic First-Year Experience <i>Victoria College, University of Toronto</i>	2020 - 2021

PRESENTATIONS AND POSTERS

INVITED TALKS

1. **TASTY**, Department Seminar

- | | |
|---|---------------|
| University of Toronto, Canada | FEBRUARY 2024 |
| <i>Cosmology using the detected population of gravitational wave sources.</i> | |
| 2. Astronomy Union Research Series | |
| University of Toronto, Canada | JANUARY 2023 |
| <i>Neutron stars and their fundamental oscillation modes.</i> | |
| 3. CITA Summer Research Presentations | |
| University of Toronto, Canada | AUGUST 2022 |
| <i>Neutron stars and their fundamental oscillation modes.</i> | |
| 4. Dunlap Institute Undergraduate Research Fair | |
| University of Toronto, Canada | JUNE 2021 |
| <i>Emulating kilonovae models.</i> | |
| 5. QCrew Group, Center for Quantum Technologies (CQT) Seminars | |
| Virtual/National University of Singapore | JUNE 2020 |
| <i>Automating the search for superconducting qubit configurations.</i> | |
| 6. Singapore Synchrotron Light Source Seminars | |
| National University of Singapore | AUGUST 2019 |
| CONTRIBUTED | |
| 7. Nordic Winter School, | |
| Skeikampen, Norway | JANUARY 2024 |
| <i>Cosmology using the detected population of gravitational wave sources.</i> | |
| 8. 33rd Midwest Relativity Meeting | |
| Chicago, USA | NOVEMBER 2023 |
| <i>Cosmology using the detected population of gravitational wave sources.</i> | |
| 9. Perimeter Institute - CITA Meeting | |
| Waterloo, Canada | OCTOBER 2023 |
| <i>Neutron stars, kilonovae and cosmology using gravitational waves.</i> | |
| 10. Canadian Undergraduate Physics Conference 2020 | |
| Virtual/University of Western Ontario, Canada | NOVEMBER 2020 |
| <i>Automating the search for superconducting qubit configurations.</i> | |
| 11. Arts and Science Undergraduate Research Fair | |
| University of Toronto, Canada | FEBRUARY 2020 |
| POSTERS | |
| 12. Canadian Astronomical Society Annual Meeting - CASCA 2024 | |
| University of Toronto, Toronto, Canada | JUNE 2024 |
| <i>Cosmology using the detected population of gravitational wave sources.</i> | |
| 13. Hotwiring the Transient Universe VII | |
| University of Toronto, Toronto, Canada | MAY 2024 |
| <i>Cosmology using the detected population of gravitational wave sources.</i> | |
| 14. International High Performance Computing (HPC) Workshop | |
| Georgia Institute of Technology, Atlanta, USA | JULY 2023 |
| <i>High performance computing applications to kilonovae surrogate models.</i> | |
| 15. Department of Astronomy Summer Undergraduate Fair | |
| Best Poster Award , University of Toronto, Canada | AUGUST 2021 |
| <i>Emulating kilonovae models.</i> | |
| 16. Department of Physics Undergraduate Research Fair (Cancelled) | |
| University of Toronto, Canada | JANUARY 2021 |
| OUTREACH | |
| 17. Physics Society, Outreach Talk | |
| United World College of South East Asia (Dover), Singapore | APRIL 2023 |
| <i>A conceptual approach to gravitational wave astrophysics.</i> | |

INVITED PANELIST

18. Graduate Life Workshop, Astronomy Union	OCTOBER 2023
19. Graduate Prospective Student Visit, Department of Physics	FEBRUARY 2024
20. Graduate Applications Workshop, Astronomy Union	OCTOBER 2023
21. Vic-Ready Program, Victoria College	OCTOBER 2023
22. Age of Universe Workshop, Dunlap Institute	JULY 2023
23. International Student Orientation, Victoria College	AUGUST 2022

EDUCATION EXPERIENCE

TEACHING ASSISTANT

PHY293: Classical Mechanics, University of Toronto	FALL 2024
PHY152: Physics II, University of Toronto	WINTER 2024, 2025
PHY132: Introduction to Physics II, University of Toronto	WINTER 2023
PHY131: Introduction to Physics I, University of Toronto	FALL 2022, 2023

COLLABORATIONS

Cosmic Explorer Consortium General Member	NOVEMBER 2023 - PRESENT
LIGO Scientific Collaboration Rates & Populations Group, O4 Offline Injections, O4a Rates & Populations Paper	MAY 2023 - PRESENT

CERTIFICATIONS

Scientific Computing Certificate, SciNet, UofT	2023
Teaching Fundamentals Certification, UofT	2022

MEDIA APPEARANCES

<i>Remarkable gravitational-wave signal detected by the LVK Collaboration</i> CITA News , UofT ArtSci News	APRIL 2024
<i>HERON Mk.II Satellite Launch (University of Toronto Aerospace Team)</i> The Varsity , UofT Engineering News	NOVEMBER 2023
<i>The 2022 Crescam Serviendo Leadership Award Winners</i> Victoria College News	APRIL 2022

REFERENCES

Prof. Reed Essick Department of Physics University of Toronto, Canada essick@cita.utoronto.ca	Dr. Phillipe Landry Canadian Institute for Theoretical Astrophysics University of Toronto, Canada plandry@cita.utoronto.ca
Dr. Keir Rogers Department of Physics Imperial College London, UK keir.rogers@utoronto.ca	

Compiled on October 23, 2024

AUTHORED LVK PUBLICATIONS

All LIGO-VIRGO-KAGRA publications which I was an author on.

3. LVK (incl. **Mali**) “Search for gravitational waves emitted from SN 2023ixf”, 2024.

2. LVK (incl. **Mali**) “A search using GEO600 for gravitational waves coincident with fast radio bursts from SGR 1935+2154”, 2024.
1. LVK (incl. **Mali**) “Observation of Gravitational Waves from the Coalescence of a 2.5–4.5 M_{\odot} Compact Object and a Neutron Star”, 2024.