

# Utkarsh Mali

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

COMPILED ON FEBRUARY 7, 2024

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

## PUBLICATIONS

1. Vogel et al. (incl. **Mali**) "HERON: Demonstrating a Novel Biological Platform for Small Satellite Missions", 2021, *SSC21-WKII*.

## AWARDS AND GRANTS

**Total = \$124,345 CAD**

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<b>Doctoral Fellowship, PhD (International)</b> Department of Physics, University of Toronto \$37,470	SEPTEMBER 2023
<b>High Performance Computing Travel Grant</b> SciNet, University of Toronto/Georgia Institute of Technology \$3,075	JULY 2023
<b>Graduate Fellowship, MSc (International)</b> Department of Physics, University of Toronto \$56,321	SEPTEMBER 2022
<b>Summer Undergraduate Research Fellowship</b> Canadian Institute for Theoretical Astrophysics, University of Toronto \$9,500	MAY 2022
<b>Undergraduate Summer Training Program</b> Centre for Global Change Science, University of Toronto \$8,500	MAY 2022 (DECLINED)
<b>Summer Undergraduate Research Fellowship</b> Dunlap Institute, University of Toronto \$9,400	MAY 2022 (DECLINED)
<b>Crescam Serviendo (Leadership) Award</b> Victoria College, University of Toronto	MARCH 2022
<b>Summer Undergraduate Research Fellowship</b> Dunlap Institute, University of Toronto \$9,400	MAY 2021
<b>Summer Undergraduate Research Fellowship: Best Poster Award</b> Dunlap Institute, University of Toronto \$50	MAY 2021

<b>Natalia Krasnopolskaia Memorial Research Fellowship</b> University of Toronto \$3,150	JULY 2020
<b>Undergraduate Research Grant</b> National University of Singapore \$1,900	MAY 2020
<b>Undergraduate Research Grant</b> National University of Singapore \$3,800	MAY 2019

## LEADERSHIP, OUTREACH, SERVICE AND VOLUNTEERING

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

## PRESENTATIONS AND POSTERS

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### INVITED TALKS

- TASTY, Department Seminar**  
University of Toronto, Canada  
*Cosmology using the detected population of gravitational wave sources.* FEBRUARY 2024
- Astronomy Union Research Series**  
University of Toronto, Canada  
*Neutron stars and their fundamental oscillation modes.* JANUARY 2023
- CITA Summer Research Presentations**  
University of Toronto, Canada  
*Neutron stars and their fundamental oscillation modes.* AUGUST 2022
- Dunlap Institute Undergraduate Research Fair**  
University of Toronto, Canada  
*Emulating kilonovae models.* JUNE 2021

5. **QCrew Group, Center for Quantum Technologies (CQT) Seminars**  
Virtual/National University of Singapore JUNE 2020  
*Automating the search for superconducting qubit configurations.*
6. **Singapore Synchrotron Light Source Seminars**  
National University of Singapore AUGUST 2019

#### CONTRIBUTED

7. **Nordic Winter School,**  
Skeikampen, Norway JANUARY 2024  
*Cosmology using the detected population of gravitational wave sources.*
8. **33rd Midwest Relativity Meeting**  
Chicago, USA NOVEMBER 2023  
*Cosmology using the detected population of gravitational wave sources.*
9. **Perimeter Institute - CITA Meeting**  
Waterloo, Canada OCTOBER 2023  
*Neutron stars, kilonovae and cosmology using gravitational waves.*
10. **Physics Society, Outreach Talk**  
United World College of South East Asia (Dover), Singapore APRIL 2023  
*A conceptual approach to gravitational wave astrophysics.*
11. **Canadian Undergraduate Physics Conference 2020**  
Virtual/University of Western Ontario, Canada NOVEMBER 2020  
*Automating the search for superconducting qubit configurations.*
12. **Arts and Science Undergraduate Research Fair**  
University of Toronto, Canada FEBRUARY 2020

#### POSTERS

13. **International High Performance Computing (HPC) Workshop**  
Georgia Institute of Technology, Atlanta, USA JULY 2023  
*High performance computing applications to kilonovae surrogate models.*
14. Department of Astronomy Summer Undergraduate Fair  
**Best Poster Award**, University of Toronto, Canada AUGUST 2021  
*Emulating kilonovae models.*
15. Department of Physics **Undergraduate Research Fair (Cancelled)**  
University of Toronto, Canada JANUARY 2021

#### INVITED PANELIST

16. Graduate Applications Workshop, Astronomy Union OCTOBER 2023
17. Vic-Ready Program, Victoria College OCTOBER 2023
18. Age of Universe Workshop, Dunlap Institute JULY 2023
19. International Student Orientation, Victoria College AUGUST 2022

## RESEARCH EXPERIENCE

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#### GRADUATE

Spectral-siren gravitational wave cosmology vs tidal universal relations  
Supervisor: [Prof. Reed Essick](#) 2022 - PRESENT

#### UNDERGRADUATE

Neutron star fundamental mode oscillations: CITA, University of Toronto  
Supervisor: [Dr. Philippe Landry](#) SUMMER 2022

Machine learning emulator for kilonovae: Dunlap, University of Toronto  
Supervisor: [Dr. Keir Rogers](#) SUMMER 2021

Image classification of Martian topographic features: University of Toronto  
Supervisor: [Prof. Christopher Lee](#) SUMMER 2020

Automated discovery of superconducting qubits: CQT, Singapore  
Supervisor: [Prof. Yvonne Gao](#) SUMMER 2020  
Rapid materials authentication using FTIR spectroscopy: NUS, Singapore  
Supervisors: [Dr. Krzysztof Banas](#) and [Dr. Agnieszka Banas](#) SUMMER 2019

## EDUCATION EXPERIENCE

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### TEACHING ASSISTANT

PHY152: Physics II, University of Toronto WINTER 2024  
PHY132: Introduction to Physics II, University of Toronto WINTER 2023  
PHY131: Introduction to Physics I, University of Toronto FALL 2022-2023

## COLLABORATIONS

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**Cosmic Explorer Consortium** NOVEMBER 2023 - PRESENT  
General Member

**LIGO Scientific Collaboration** MAY 2023 - PRESENT  
Rates & Populations Group, O4 Offline Injections

## CERTIFICATIONS

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

## MEDIA APPEARANCES

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*HERON Mk.II Satellite Launch (University of Toronto Aerospace Team)* NOVEMBER 2023  
[The Varsity, UofT Engineering News](#)

*The 2022 Crescam Serviendo Leadership Award Winners* APRIL 2022  
[Victoria College News](#)

## REFERENCES

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Prof. Reed Essick  
Department of Physics  
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Dr. Phillipe Landry  
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