Utkarsh Mali

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Education

University of Toronto, Victoria College
H.*B.Sc. in Physics, Mathematics and Computer Science*   *2018-2022*

Research Experience

UNDERGRADUATE

Kilonovae Light Curves
University of Toronto   *2021*
Supervisor: Dr. Keir K. Rogers
Model fitting visible counterparts to gravitational wave events using Gaussian processes, principal components analysis and Markov-chain Monte-Carlo.

Image classification of Martian topographic features
University of Toronto   *2020*
Supervisor: Prof. Christopher Lee
Created an efficient scalable machine learning model using supervised machine learning methods, mask detection.

Circuit Quantum Electrodynamics
National University of Singapore   *2020*
Supervisor: Prof. Yvonne Gao
Exploring a software automating the discovery of superconducting qubits.

Organic Spectroscopy
National University of Singapore   *2019*
Supervisor: Dr. Krzysztof Banas
Rapid authentication of organic materials using Fourier Transform Infrared (FT-IR) spectroscopy using multivariate analysis.

Conference Posters

Department of Astronomy Summer Undergraduate Fair   **University of Toronto**
Machine learning the visible counterparts to gravitational wave events: kilonovae   *2021*

Department of Physics Undergraduate Research Fair   **University of Toronto**
Analysis of topographic features on Mars using machine learning   *2020*

Conference Presentations and Invited Talks

Department of Astronomy Summer Undergraduate Presentations   **University of Toronto**
Kilonovae: We don't know what we don't know   *2021*

Canadian Undergraduate Physics Conference 2020   **University of Western Ontario**
Analysing SCILLA: the discovery of superconducting qubits   *2020*

Center for Quantum Technologies   **National University of Singapore**
Software developments on automated transmon discovery   *2020*

Arts and Science Undergraduate Research Fair   **University of Toronto**
Rapid authentication of organic materials using FTIR spectroscopy   *2019*

Singapore Synchrotron Light Source   **National University of Singapore**
Adulteration of Edible Bird's Nests   *2019*

Publications

1. Dylan Vogel, Avinash Naraiah Mukkala, Kimberly Ren, et.al: "*HERON: Demonstrating a Novel Biological Platform for Small Satellite Missions*"   **Contributing Author**

Awards and Grants

Summer Undergraduate Research Grant
University of Toronto, $9,393   *2021*

Summer Undergraduate Poster Award
University of Toronto, $50   *2021*

Dean's Honors List
University of Toronto   *2021*

Natalia Krasnopolskaia Memorial Research Fellowship
University of Toronto, $3,159   *2020*

Undergraduate Research Grant
National University of Singapore, $1,883   *2020*

Undergraduate Research Grant
National University of Singapore, $3,766   *2019*

National Youth Achievement Award, Gold
Duke of Edinburgh, Singapore   *2016*

National Youth Achievement Award, Silver
Duke of Edinburgh, Singapore   *2014*

Professional Positions

Thermal Engineer
University of Toronto Aerospace Team   *2018-2020*
- Designing and testing battery insulation
- Consultant for the payload bay insulation.
- Created and tested hardware components for ground station
- Surface mount, through-hole and solder paste stencilling of circuit boards

Professional Development

Senior International Mentor
Office of Dean of Students, Victoria College   *2018-2022*
Courses:
- Identify assist refer
- Peer support relationship
- 1 on 1 communication
- Facilitating groups online
- Creating an inclusive environment
- Mentor leadership training

Events Director

Victoria University Students Administrative Council, Academic Commission   *2018-2019*

Courses:

- Developing alumni relations
- Giving an academic resume workshop

Lance Corporal (National Service)

Singapore Armed Forces   *2016-2018*

Courses:

- Class 4 driving course
- Leadership basic training
- Marksmanship course
- Mechanics and machining course
- Creating an include environment

Outreach

Volunteer

Singapore Science Center   *2014-2019*