Utkarsh Mali

September 19, 2021
UTORID: 1004713232
55 Charles Street West, Toronto ON M5S 2W9
+1 (647) 234-0742
utkarshmali.github.io/
linkedin.com/in/utkarshmali
github.com/utkarsh7236

Education

B.Sc.(Hons.) University of Toronto Sep'18 - Ongoing
Physics specialist and mathematics minor with additional studies into the research and philosophy of science. Expected graduation in 2022. cGPA: 3.53/4.0

Experience

Summer Undergraduate Research Program (SURP), University of Toronto
May' - Aug' 21
Machine learning intern at Dunlap Institute for Astronomy and Astrophysics. Model fitting visible counterparts to gravitational wave events. **Created a software** which predicts new light curves associated with binary neutron star mergers **using machine learning and Bayesian statistics**. Used Gaussian processes and principal component analysis in training stage. Used Markov-chain Monte-Carlo in Bayesian inference stage.

Summer Undergraduate Research Fellowship (SURF), University of Toronto
Jul' - Aug' 20
Image classification of Martian topographic features using machine learning. Created an **efficient scalable machine learning model in python using sklearn**. The model was tested against independent Martian surface data and used supervised machine learning methods and mask detection. The Martian surface data was provided by NASA HiRISE.

Research Intern, Center for Quantum Technologies (CQT) May' - Jun' 20
Quantum computing intern at the National University of Singapore (NUS). Conducted **research in circuit quantum electrodynamics** by exploring a software automating the discovery of superconducting qubits. The software, written in python, used quasi-newton numerical optimisation which was tested using different qubit systems in the transmon qubit regime.

Skills

Technical
Python (Pandas, sklearn)
R/RStudio (Shiny, RMarkdown)
Excel (Goal-Seek, Macros)
Java (JavaFX)
SQL
Photoshop
LaTeX

Personal
Problem Solving
Time Management
Communication

Volunteering

Academic Commission	Toronto
Science Center	Singapore
Tabitha Foundation	Cambodia
Primary School TA	Singapore
Womens Welfare	Singapore
Deep Griha Orphanage	India

Research Attachment, Singapore Synchrotron Light Source Jun' - Aug' 19
Attachment as a beamline scientist at the National University of Singapore (NUS) conducting research with Fourier Transform Infrared Spectroscopy (FTIR). **Research and analysis** into the adulteration of edible birds nest. Findings presented at FTIR workshop in Berlin by supervisor and at the University of Toronto Arts and Science Undergraduate Research Conference (ASSU-URC), by me. **Created a software with R** implementing multivariate analysis methods on spectral samples through RStudio.

University of Toronto Aerospace Team Oct' 18 - May' 20
Development of the Heron Mk-II Satellite. **Designed and tested insulation and hardware components** for the payload bay, battery chamber and ground station using surface mount, through-hole and solder paste stencilling. Satellite scheduled for launch in early 2021. Publication: Contributing author.

Office of the Dean of Students, Victoria College May 19 - Ongoing
Senior International Mentor (SIM). Developed and conducted orientation for international students at Victoria College. Ongoing event management of international students.

National Service in the Singapore Armed Forces Oct' 16 - Aug' 18
Full time national service. Over 60 unique combat missions as a transport operator. Collectively, over 30 tons of military cargo and infantry/artillery regiments transported across the country. **Collaborative missions** with US, Australia, Malaysia and Brunei armies separately. Peacetime training in military techniques and weapon mastery focused around building mental resilience, growth in maturity and leadership skills.