

Viduranga Shenal Landers

Wattala, Sri Lanka | 27/02/2002 | [in viduranga-landers](#) | [vidurangalanders.github.io](#) | [vidurangalanders@gmail.com](#)

A highly motivated student with strong leadership qualities who is constantly seeking new challenges to push the limits of his knowledge. Actively seeking for academic opportunities in astronautics and quantum computing.

EDUCATION

University of Colombo School of Computing

Colombo, Sri Lanka

Undergraduate Degree

2023 - Present

- Pursuing B.Sc. program in Computer Science (GPA: 3.89/4.00, Class Rank: 1/230)
- Course Projects: ERP system for educational institutes (*microservices architecture, miniReact framework, Java backend, no libraries or frameworks used*), Malloc emulator (python), Assembly emulator (python), Social media web-app (MERN)
- Honors: Director's List (Semesters 1, 2), Faculty award for best performing student (Year 1)
- Clubs: Executive Committee Member (ISACA), Coordinator (ACM), Divisional Manager (SEDS), Member (IEEE)

Education & Professional Development Platform, Space Generation Advisory Council

Remote

ACHIEVED Academy

Mar - Aug 2024

- Systems Engineering (84%), Launch & Operations (87%), Space Mission Design & Analysis (97.5%), Payload Design (95%)
- Course Projects: MBSE model of a lunar habitat using Arcadia method and Capella

QWorld and Faculty of Computing, University of Latvia

Remote

QClass 23/24 (6 ECTS, Graduate Level)

2023 - 2024

- Courses: Elements of Quantum Computing and Programming (100%), Elementary Quantum Algorithms (81.4%)
- Course Projects: Quantum Computing based Card Game (QOmi)

D.S. Senanayake College

Colombo, Sri Lanka

Secondary Education

2013 - 2022

- G.C.E. Advanced Level (Physical Science Stream): Chem: A, Phys: B, C.Maths: C, Eng: A, SAT: 1490 (790 M, 700 EBRW)
- Clubs: President (Astronomy), Secretary (Social Services), Exec Member (Aeronautical), Quiz Captain (Science)

RESEARCH EXPERIENCE

Nexus Aurora Corporation

Project Lead (Aug 2022 – Present) [🔗](#)

- Leading an international research team in the development of a planetary penetrator (Soil Penetration Darts)
- Work & Tools: Hyper-velocity impact simulation using DEM models (Altair EDEM, PFC); CAD (Solid Edge, Solidworks); Mission analysis (Python, GMAT); FEA (Solidworks); Prototyping (3D printing); MBSE (Capella) System design & innovation

Team Leader (Feb 2020 – Present) | [Lunarbot](#) [🔗](#)

- Founder of Lunarbot, a local student team that develops innovative instruments for planetary rovers
- Innovations: A grouser adjustable wheel system (SAWS); An extendable drilling mechanism for deep drilling (SWORD); Runners-up Lunar rover concept at the Singapore Space Challenge 2021 (SPIDER)
- Partnered with Nexus Aurora to produce eight prototypes of the SAWS system, testing six prototypes on the SSAM rover in Arctic and two on an Axel rover configuration in Sri Lanka, with a possible funding opportunity from NASA JPL
- Work & Tools: CAD (Adobe Inventor); Terramechanic simulations (Altair EDEM); FEA (Solidworks); Self-locking gear system design; Navigation and control algorithm design; System design & innovation

Great Lunar Expedition for Everyone [🔗](#)

Remote Student Team Lead (May 2022 – Present)

- Great Lunar Expedition is a NASA Artemis Challenge that aims to send student-developed ChipSats to the Moon
- Led the mission operations planning and programming phases of two LunaSats and conducted several outreach activities
- Designed a Lunar Deployment Module to disperse 100 LunaSats – L-SPyDer: Best proposal in the overall category
- Work & Tools: Mission design; Power budget (python); Programming (Arduino); System design & innovation

Robotics and Rover Division of SEDS Sri Lanka [🔗](#)

Technical Lead - Taprobane v4.0 (Apr 2023 – Present) | Systems Engineering Lead - Taprobane v3.0 (Jan 2022 – Mar 2023)

- The Robotics and Rover Division of SEDS Sri Lanka is developing Taprobane, Sri Lanka's first ever analog Mars rover
- Currently leading a 50+ member university student team in the development and renovation of Taprobane rover
- Work & Tools: Mission design; System Design & Innovation; PDR & CDR report preparation

Space Exploration Project Group | Space Generation Advisory Council [🔗](#)

Co-Lead - HOPE Team (Jan 2023 – Dec 2023) | Structures & Thermal Subsystem Lead - RAISE Team (Jan 2022 – Dec 2022)

- Led an international research team in the design of a CubeSat mission to a Uranian moon (HOPE-2023)
- Designed the mechanical and thermal subsystems of a sample return mission concept to Mercury (RAISE-2022)
- Work & Tools: CAD (Solid Edge), MBSE (Capella), Thermal Analysis (python); Mission budgets; System design & innovation

WORK EXPERIENCE

Technical Assistant - Part Time (Sep 2023 – Present) | iRentTech

- Overseeing delivery and repairs (software & hardware) of Laptops

HONORS AND AWARDS

Faculty Award	University of Colombo School of Computing	2024
Asia Pacific Space Leader Award	Space Generation Advisory Council	2023
Keynote Speaker	15 th International Conference on Global Security, Safety & Sustainability	2023
Distinction Award	Singapore Space Challenge 2021 (<i>Team</i>)	2021
Global Nominee	NASA Space Apps Challenge 2020 (<i>Team</i>)	2020

ACHIEVEMENTS

Winner (Overall Category)	Lunar Deployment Challenge (<i>Team</i>) – NASA's GLEE Mission	2024
1 st Runner Up	Predicta (<i>Team</i>) – Data Science Hackathon	2024
1 st - University (16 th - Sri Lanka)	IEEE Xtreme 18.0 (<i>Team</i>) – Competitive Programming Hackathon	2024
40 th Global (AWS \$500 Powerup)	QHack 2024 (<i>Team</i>) – Quantum Machine Learning Hackathon	2024
4 th - Sri Lanka (152 nd - Global)	IEEE Xtreme 17.0 (<i>Team</i>) – Competitive Programming Hackathon	2023
Best 3 Applications	Quantum Network Explorer Application Challenge	2023
Finalist Team (17 th)	European Rover Challenge - On-site edition (<i>Team</i>)	2022
Top Scorer	IBM Quantum Challenge – Quantum Computing Hackathon	2021
Silver Award	Hong Kong International Math Olympiad	2020
Gold Medalist	Sri Lankan Astronomy & Astrophysics Olympiad	2019

PUBLICATIONS

Conference Papers

Quantum e-voting system using QKD and enhanced quantum Oracles

16th Annual International Conference on Global Security, Safety and Sustainability, ICGS3 (Nov 25-27, 2024) | Landers V.*

Economical Lunar Sample Return Mission with Soil Penetration Darts (IAC-24,A3,IP,118,x89101) [🔗](#)

75th International Astronautical Congress in Milan, Italy (Oct 14-18, 2024) | Landers V.*, Pathirana O., et al

High-technology Operation for Planetary Exploration - uRanian mOons impActoR (HOPE-ROAR) mission: an innovative in-depth study of the Uranian satellites (IAC-23,B4,8,12,x76984) [🔗](#)

74th International Astronautical Congress in Baku, Azerbaijan (Oct 2-6, 2023) | Landers V.*, Campioli S., et al

Soil Penetration Darts (SPDs) for Deep Soil Sampling (IAC-22,A3,IPB,30,x72590) [🔗](#)

73rd International Astronautical Congress in Paris, France (Sep 18-22, 2022) | Landers V.*, Pathirana O., et al

Mercury Sample Return Mission Design Utilizing Innovative Systems and Technologies (IAC-22,A3,5,1,x69552) [🔗](#)

73rd International Astronautical Congress in Paris, France (Sep 18-22, 2022) | Rao S.*, Landers V., et al

A Self Adapting Wheel System for Space Exploration Rovers (IAC-21,E2,3-GTS.4,2,x65366) [🔗](#)

72nd International Astronautical Congress in Dubai, UAE (Oct 25-29, 2021) | Landers V.*, Pathirana O., et al

Pre-prints

Symmetrically Entangled Quantum Oracles for Quantum Key Distribution (2023) [🔗](#) | Landers V.*

Book Chapters

Quantum Revolution in Space: Enhancing Space Technology (Edited by Prof. Jahankhani H., Kendzierskyj S., et al) [🔗](#)

Space Law Principles and Sustainable Measures, Space Law and Policy Series, Springer | Landers V.*

Quantum Technologies for Space and Aerial Vehicles (Edited by Prof. Jahankhani H., Kendzierskyj S., et al) [🔗](#)

Space Governance: Challenges, Threats and Countermeasures, Space Law and Policy Series, Springer | Landers V.*

Planetary Penetrators for Space Mining (*abstract accepted*) (Edited by Prof. Jahankhani H., Dr. Kilpin D., et al)

Space Mining: Humanities Quest for Equity, Space Law and Policy Series, Springer | Landers V.*

PATENTS

A Wheel that includes Autonomous Adjustable Grousers (Sri Lankan Patent No: LK21653 – Oct 2023)

A Fully Autonomous Extendable Drill and Method Thereof (Sri Lankan Patent No: LK21652 – July 2024)

SKILLS

Computer	Programming (C, C++, Python, Java, Scala, Arduino, VHDL) Web Development (MERN, SQL, HTML, CSS) LaTeX Linux Quantum Computing (Qiskit, QNE-ADK, PennyLane) AI & ML Data analysis
Other Technical	CAD/FEM (SolidWorks, SolidEdge, Inventor) DEM (EDEM, PFC) MBSE (Capella) FPGA IoT
Languages	Sinhala (Native) English (IELTS Band 8)

PROFESSIONAL TRAINING

Certifications

FPGA Embedded System Design Arthur C Clarke Institute for Modern Technologies	July 2024
QBronze, QZinc, QMercury, QNickel Diplomas in Quantum Computing Technologies (Virtual) QWorld	2020 - 2024
Quantum Hardware Certificate, Quantum Software Certificate Womanium Quantum	2023
Introduction to Programming with Neutral Atoms QuEra	Aug 2023
Introduction to Quantum Computing & Programming (Virtual) Coding School Qubit x Qubit IBM	2020 - 2021
Certified Network Security Specialist - CNSS, (Virtual) International Cyber Security Institute	May - Jul 2020
JAVA Application Development University of Colombo School of Computing	Jan - Mar 2019

Summer Schools

Sagan Summer Workshop - x3 times, (Virtual) NASA Exoplanet Science Institute Caltech	2022 - 2024
Qiskit Global Summer School - x3 times, (Virtual) IBM	2021 - 2023

Other

CubeSat Development and Ground Station Control (Virtual) SEDS Pera IEEE MTT-S Orion Space	May - Jun 2021
CubeSat Workshop and Lecture Series SEDS Pera Orion Space University of Peradeniya	7 - 10 Mar 2020

VOLUNTEERING

National Point of Contact (Oct 2023 – Present) | [Space Generation Advisory Council](#)

- Representing Sri Lanka in SGAC in support of the United Nations program on Space Applications

Divisional Manager (Mar 2024 – Present) | [Robotics and Rover Division of SEDS Sri Lanka](#)

- Overlooking the Taprobane Rover and other robotics projects at SEDS Sri Lanka

Coordinator (2020 – 2022) | [SEDS Juniors of SEDS Sri Lanka](#)

- Worked as the coordinator for the first ever SEDS chapter for school students (~1000 members)

Contributor & Event Organizer

- Annual project for donating educational materials to rural schools (6 schools: More than 1500 students)
- Orbit'21 Asteroid Search Campaign (100+ students), NEEDS FOR NEEDY book donation camp (~100), Water rocket competitions (~50), Astronomy workshops (~100), Inter-school STEM competitions and exhibitions (100-500+)

Citizen Scientist (2020 – 2021) - Provisional Asteroids discovered: 2021 CH23, 2020 TL54, 2020 QF3, 2020 PX12

OTHER

Mathematical Art Publications [🔗](#) : [Collatz Feather 2.0](#) [🔗](#) and [Spiral](#) [🔗](#)

Exhibition of Mathematical Art, Joint Mathematics Meetings (JMM) 2023, Boston, MA, USA (Jan 4-7, 2023)