

KEERTHANA GUNARETNAM

Interdisciplinary Researcher

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Professional Summary

I am Keerthana. I thrive on challenges and ambitious goals. My greatest strength is the ability to combine my analytical skills with well-developed interpersonal skills. I can build and maintain high-quality technology ideas and I am most interested in discovering something new in the research field. I am committed and enthusiastic candidate seeking opportunities, and I am a Biotechnologist & Citizen Scientist.

Skills

Arduino	Scientific Writing	Deep Learning	Experimental Design
Data Visualization	Artificial Intelligence	Bioinformatics Tools	Python
R	Molecular Techniques	Deep Learning	Creative Writing
Literature Review			

Work History

Interdisciplinary Researcher, 07/2025 - Present

Research Trainee, 10/2024 to 07/2025

AraCreate – Berlin, Germany

- ✓ Contributed to the advancement of astrobiology research by studying the adaptability of space microorganisms and earth microorganisms to predict the new drug.
- ✓ Utilized bioinformatics tools to analyze sequence data, perform phylogenetic analysis, and identify extremophiles, contributing to the identification of key fungal species with potential astrobiological relevance.
- ✓ Supported the research team by anticipating project needs, proactively addressing potential experimental challenges, and ensuring the smooth execution of various research phases, from sample collection to genomic sequencing.
- ✓ Conducted extensive literature reviews to identify research gaps and opportunities for expanding the understanding of extremophiles and their potential applications in space exploration and biotechnological fields.
- ✓ Presented research findings at academic conferences, effectively communicating complex concepts related to fungal adaptability in extraterrestrial environments to diverse scientific audiences.
- ✓ Contributed to timely reporting of research progress, including the preparation of detailed reports and publications, ensuring the research outcomes were accurately conveyed and ready for peer-reviewed journal submission.

Researcher – 05/2024 – Present

NASA GeneLabs Open Science in Life Sciences Analyzing Working Group & NASA Exoplanet Exploration (EXOTIC)

- ✓ Design the experimental
- ✓ Propose the research with valid proposal
- ✓ Support the other research
- ✓ Lead the open science

Bioinformatics Intern, 03/2025 to present

GeneLabs (Pvt) Ltd – Colombo, Sri Lanka

- ✓ Analyzed electropherograms of Sanger sequencing data to assess sequencing quality and accuracy.
- ✓ Assisted in processing and interpreting DNA sequence data for genetic analysis.
- ✓ Gained hands-on experience with bioinformatics tools and sequence alignment software.
- ✓ Contributed to data validation and troubleshooting sequencing errors in genetic research projects.
- ✓ Worked collaboratively with researchers to extract meaningful insights from sequencing outputs.

ML/AI Intern, 09/2024 to 02/2025

BlueChip Technologies Asia – Colombo, Sri Lanka

- ✓ Implemented machine learning models for predictive analytics, enabling better decision making and forecasting capabilities.
- ✓ Ensured proper documentation of all work processes that helped create a knowledge base resourceful for future interns and team members.
- ✓ Conducted extensive research on state-of-the-art AI methodologies, contributing to the development of innovative solutions.
- ✓ Worked closely with senior researchers on cutting edge AI projects that contributed significantly to company growth and innovation efforts.

- ✓ Trained neural networks for image recognition tasks, enhancing the overall system's ability to accurately identify objects within images.
- ✓ Participated in brainstorming sessions to develop creative solutions for challenging problems faced during project implementation stages.

Biomedical Engineer, 09/2023 to 03/2024

SLT Digital Services (Pvt) Ltd – Colombo, Sri Lanka

- ✓ Optimized medical device performance with thorough testing and analysis, ensuring safety and efficacy.
- ✓ Trained healthcare professionals on proper use of biomedical equipment, improving overall patient care standards.
- ✓ Assisted in manuscript preparation for publication in peer reviewed journals, highlighting the integration of machine learning algorithms in the "**Mobile Health Center**" to predict conditions like diabetes and heart rate abnormalities in real time.
- ✓ Developed strong collaborations with data scientists and healthcare professionals to ensure the machine learning models were effectively trained, validated, and integrated into the mobile health system.
- ✓ Improved predictive accuracy by troubleshooting and optimizing machine learning models, ensuring reliable predictions for diabetic conditions and heart rate anomalies based on patient data collected via mobile sensors.

Education

1. **Bachelor of Science (Hons) in Biotechnology**
Sri Lanka Institute of Information Technology – Malabe, Colombo, Sri Lanka
✓ CGPA = 3.45
✓ Graduated: Oct 1st, 2025.
2. **PGDP in Bioinformatics, Genomics & Data Science**
Bversity – Chennai, India
3. **Payload Engineering, Software, High Altitude Balloon Program**
Multi-Planet University (MPU) – Washington, DC

Researches

1. **Characterization of soil and rock inhabiting fungi from three selected localities in Sri Lanka with potential astrobiological applications – Undergraduate Research.**
This research investigates the adaptability of rock inhabiting fungi from those areas as potential models for life in extrarestrial environments. The findings will provide insights into fungal survival strategies under extreme conditions, contributing to astrobiology and biotechnology.
2. **Project SangerScope – Internship Research**
Developed an interactive tool for visualizing and analyzing Sanger sequencing chromatograms to assist in base calling, mutation detection, and quality assessment. Integrated bioinformatics workflows for interpreting sequence data, enabling efficient downstream applications such as primer validation and gene identification. The project supports molecular biology research and education by providing a user-friendly interface for sequence analysis.
3. **EXOTIC (Exoplanet Exploration: Planets Beyond Our Solar System) – NASA Citizen Science**
This project aims to enhance our understanding of exoplanets by developing advanced models for their characterization. By analyzing exoplanet atmospheres and potential habitability, the research contributes to planetary science and the search for life beyond our solar system.
4. **Building the space biology model zoo – NASA Space Apps Challenge**
This project focuses on developing comprehensive biological model database for space research, aiding in the study of how various organisms adapt to microgravity and extreme space conditions.
5. **Fly by wireless – NASA Space Apps Challenge**
This research explores the implementation of wireless communication technologies for space missions, enhancing data transfer efficiency in deep space exploration.
6. **Mobile Health Center – SLT Digital (Pvt) Ltd**
This project aims to develop a mobile healthcare system that provides accessible medical diagnostics and treatments, particularly in remote areas.
7. **Human factors of COVID-19 – NASA Space Apps Challenge (Covid)**
This study examines the psychological, social, and ergonomic impacts of COVID-19 on human behavior, healthcare systems, and workplace dynamics.
8. **Space biology superhero – NASA Space Apps Challenge**
This project highlights key biological adaptations that could enable human survival in space, drawing parallels between extremophiles and potential human enhancements for space travel.
9. **Climate change prediction – Women In Data Science**

This initiative promotes the role of women in data science by developing AI driven climate prediction models that enhance global climate resilience.

10. Kilonova seekers - Zooniverse

This project focuses on detecting and analyzing kilonova, the cosmic explosions that occur during neutrino star mergers, to understand their role in heavy element formation and gravitational waves.

11. Name Neutrino! - Zooniverse

This research aims to improve neutrino detection methods and public engagement in particle physics by exploring neutrino interactions and their implications in astrophysics.

12. Genome Detectives - Zooniverse

This project leverages genomic sequencing techniques to identify unknown pathogens, genetic disorders, and evolutionary trends in various organisms.

13. Redshift Wrangler - Zooniverse

This research focuses on measuring cosmic redshifts to understand the expansion of the universe and the large-scale structure of galaxies.

14. Dark Energy Explorers - Zooniverse

This project examines the nature of dark energy and its influence on the accelerating expansion of the universe observational data and theoretical models.

15. Diabetic Retinopathy Stage Prediction – Mentor for undergraduate project

This research aims to develop a machine learning model to predict the stages of diabetic retinopathy using retinal imaging, enabling early diagnosis and prevention of vision loss.

16. Skin disease, skin tone, and skin type prediction – Mentor for undergraduate project

This project focuses on leveraging AI to classify skin diseases, predict skin tone variations, and determine skin types for personalized skincare and medical diagnosis.

17. The Kepler – Creative writing Competition Poetry

The Astrobiology Science Conference (AbSciCon) 2022, held in Atlanta, Georgia, US, 15-20 May 2022, Session: Creative Writing Competition: Poetry.

Extracurricular Activities

- ✓ NASA Space Apps Local Lead of NASA Space Apps Challenge – 2023 to Present
- ✓ NASA Space Apps Collective Member of NASA Space Apps Cohort – 2024 to Present
- ✓ Eisenhower Fellowship Team - 2025
- ✓ NASA Citizen Scientist, EXOTIC – 2023 to present
- ✓ Citizen Scientist Ambassador – CitSci Foundation – 2024 to present
- ✓ Citizen Scientist, International Asteroid Search Collaboration – 2023 to Present
- ✓ Ambassador of Asia, Women in Data Science – 2024 to Present
- ✓ Space Generation Advisory Council Member – 2019 to Present
- ✓ Space Medicine & Life Member – 2019 to Present
- ✓ Mentee – Women in Big Data Science – 2024 to 2025
- ✓ Editor, Writer & Translator – Leo Club SLIIT, Rotaract Club SLIIT, Biotechnology Club, SLIIT
- ✓ Secretary, SEDS SLIIT – 2024 to 2025
- ✓ Manager of Biomedical Division, SEDS Sri Lanka – 2024 to 2025
- ✓ Planetary Defender, Planetary Science, NASA - 2023
- ✓ Marketing Team, Moon Village Association – 2020 to 2021
- ✓ Content writer – Medium

Languages

Tamil – Native	English – Advanced	Sinhala – Upper Intermediate
German – Elementary	French – Elementary	Russian – Intermediate Spanish - Intermediate

Certifications

- ✓ Certificate of Achievement Educator Professional Development Event – Explore Humans in Space, Explore Solar System & Beyond – Jun 2023
- ✓ Certificate of achievement “Educator Professional Development Event – NASA EPDC Virtual Learning Opportunities – Jun 2024
- ✓ Certification for “VI Encuentro Internacional de la Red Latinoamericana y del Caribe del Espacio – ReLaCa ESPACIO” – May 2022
- ✓ Certificate of participation “Humanos en el espacio” – Oct 2024

- ✓ Galactic problem solver, Global problem solver – Oct 2024
- ✓ Certificate of participation for “Mission to Mars Student Challenge” – May 2024
- ✓ Top 105 YOUNG ENTREPRENEURS Certificate of Achievement, SPARK - Jul 2023
- ✓ Certificate for presenter of Moon Village Design Hackathon – Jun 2023
- ✓ Certificate of planetary defender, The Planetary Society and Stardust @Home – Nov 2023
- ✓ Certificate of stellar lead – Oct 2024
- ✓ Certificate of participation of Women In Data Science (WiDS) Worldwide, Climate Change Challenge – Nov 2023
- ✓ Certificate of participation Codecon 3.0 – May 2023
- ✓ Certificate of participation of “Flood Risk assessment in Cameroon” workshop – March 2023
- ✓ Certificate of participation of International space challenge (ISC) – Jul 2022
- ✓ Certificate of achievement as finalist – 2nd Inter University Space Quiz Competition – Jun 2024
- ✓ Certificate of NASA’s Artemis Generation Member – Aug 2023

Referees

1. **Prof Dhanushka Udayanga**

Scientist & Senior Professor
Sri Lanka Institute of Information Technology (SLIIT)
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2. **Dr. Damitha Liyanaarachchi**

Bioinformatics Scientist
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