



Lorenzo Lunghini

● ABOUT ME

I'm a Master's student in Astrophysics at "La Sapienza" university of Rome.
My field of research is gravitational waves, in particular data analysis for the search for continuous waves.
I am interested in programming rovers for space exploration and Arduino projects.

● EDUCATION AND TRAINING

15/11/2021 Rome , Italy

BACHELOR DEGREE IN ASTROPHYSICS "La Sapienza" University of Rome

My thesis activity is based on research of continuous gravitational waves emitted by isolated neutron stars.
In my case, the technique I used is a well-implemented Hough transform called Frequency-Hough which is one of the most efficient pipelines of the Virgo and LIGO collaboration.

Website <https://www.uniroma1.it/it/pagina-strutturale/home> |

Field of study Data Analysis of Continuous Gravitational Waves | **Final grade** 106/110 |

Thesis "Ricerca di onde gravitazionali continue da stelle di neutroni isolate Tramite ricerche All-Sky"

CURRENT Rome , Italy

MASTER'S DEGREE IN ASTRONOMY AND ASTROPHYSICS "La Sapienza" University of Rome

The main activity of my ongoing master's degree is data analysis of gravitational waves using Doppler effect vetoes to discard false candidates of continuous waves from Virgo and Ligo data.
I had the opportunity to delve into concepts of space exploration based on the use of rovers, with particular attention to the exploration of Mars.

Website <https://www.uniroma1.it/it/pagina-strutturale/home>

● WORK EXPERIENCE

2023 Rome, Italy

SCHOLARSHIP FOR LAB2GO PROJECT "LA SAPIENZA" UNIVERSITY OF ROME

@ [Physics Department](#) of "La Sapienza" University of Rome, Piazzale A. Moro 5, 00185, Roma (RM), Italia.

@ [Department of Computer, Control and Management Engineering \(DIAG\)](#) of "La Sapienza" University of Rome, Via Ariosto 25, 00185, Roma (RM), Italia.

@ [Italian Space Agency \(ASI\)](#), Via del Politecnico snc, 00133 Roma (RM), Italia.

During Lab2Go project, I worked on [ROver Spaziale ITALiano](#) (ROSITA) which is a didactic rover used for sharing and developing scientific research within the context of space exploration for students of primary and secondary schools.

The rover was created from the collaboration between Italian Space Agency and the Department of Computer, Control and Management Engineering of "La Sapienza" University of Rome.

Thanks to the collaboration between ASI and DIAG I was able to use my ability to program the rover in all its aspects such as movements and graphics interface.

While working on ROSITA I managed to organize and coordinate the event hosted at ASI headquarter in Rome which consisted of matches between students from different schools that had to find as many traces of life as possible in a simulated Mars environment.

ROSITA project constituted the major part of my scholarship, meanwhile, I participated in events and fairs like European Researchers' Night, HEPscape, and Maker Faire 2023 - The European Edition.

2017 – 2017 Marina di Grosseto (GR), Italy

BEACH LIFEGUARD CENTRO BALNEARE POLIZIA DI STATO

Address Via Amilcare Ponchielli, Marina di Grosseto GR, 58100, Marina di Grosseto (GR), Italy

● **ADDITIONAL INFORMATION**

ADDITIONAL FORMATION

2023

Lab2Go

Being a part of ROSITA project was an amazing experience because I had the opportunity to improve my knowledge about robotics in all its aspects.

I learned various things about the development of a rover for space exploration such as the type of movement needed, the operative system (which in this case is Robot Operative System), and the operations that must be carried out.

EVENTS AND OUTREACH

28/04/2023

ROSITA matches at ASI headquarter

@ [Italian Space Agency \(ASI\)](#), Via del Politecnico snc, 00133 Roma (RM), Italia.

<https://www.roverspazialeitaliano.it/gare/gare-2223>

The students of the schools that joined the Rosita project challenged themselves by using the rovers to search for traces of life on Martian terrain, simulating the real use of the rover, i.e. remote control without being able to see the ground directly.

My contribution to this event was to make the communication between "mission control" and the rovers work correctly and to coordinate the carrying out of the event itself together with the organizers.

29/09/2023 – 30/09/2023

European Researchers' Night

@ Citta dell'Altra economia, Largo Dino Frisullo, 00153, Roma (RM), Italia.

<https://www.scienzainsieme.it/notte-europea-dei-ricercatori/roma2023/>

The European Researches' Night is an outreach event organized by Universities and Scientific Researches Institutes.

During this activity, I was able to use all of my knowledge about Gravitational Waves with demonstrative experiments such as space-time deformation caused by a strong mass, Michelson interferometer, and demonstration of data analysis techniques; thanks to the collaboration between Istituto Nazionale di Fisica Nucleare Rome section & "La Sapienza" University of Rome.

30/09/2023

The High Energy Physics Escape Room (HEPscape)

@ Citta dell'Altra economia, Largo Dino Frisullo, 00153, Roma (RM), Italia.

<https://web.infn.it/hepscape/>

Escape room for kids based on Compact Muon Solenoid ([CMS](#)) experiment at Conseil Européen pour la Recherche Nucléaire ([CERN](#)). Activity realized by Istituto Nazionale di Fisica Nucleare (Rome section) during the European Researches' Night 2023.

20/10/2023 – 23/10/2023

Maker Faire 2023 - The European Edition

@ Fiera di Roma, Via Portuense 1645, 00148, Roma (RM), Italia.

<https://makerfairerome.eu.it/>

Faire of do-it-yourself (DIY) with projects from a wide variety of interests, such as robotics, 3D printing, computers, arts and crafts, and hacker culture.

I was there to make people know about Lab2Go activities such as ROSITA.

Autorizzo il trattamento dei miei dati personali contenuti nel presente Curriculum Vitae ai sensi del Decreto Legislativo 30 giugno 2003, n. 196 "Codice in materia di protezione dei dati personali" e dell'art. 13 del General Data Protection Regulation (Regolamento UE 2016/679). Il presente documento è conforme rispetto a quanto prescritto dall'art. 4 del Codice in materia di protezione dei dati personali e dall'art. 26 d.lgs. 33/2013.