

Giacomo Roncoroni

Personal data

Date of birth [REDACTED]
Place of birth [REDACTED]
Nationality [REDACTED]

Research Activity

- Nov 2020 - **PhD, Università degli studi di Trieste, Trieste, Italy.**
Nov 2023 **Title:** Long-Short-Term Memory in Active Wavefield Geophysical Methods.
Tutor: Michele Pipan
- Feb 2020 - **Research fellow, Università degli studi di Trieste, Trieste, Italy.**
Oct 2020 **Nature of upper crust at Mid-Atlantic Ridge and Romanche Transform Fault using Full Waveform Inversion of ultra-long offset seismic data.**
Tutor: Michele Pipan
Co-Tutor: Satish Singh (IPGP)

Education

Master Thesis

2017–2019 **Master in Geoscience, curriculum Geophysics, Università degli studi di Trieste, Trieste, Italy.**
Final degree mark: 110 / 110 (Class honours)

Title *Synthetic seismic data generation using deep learning.*

Advisor Prof. Michele Pipan

Co-Advisor Prof. Luca Bortolussi, Dott. Carlo Fortini

Bachelor Thesis

2014–2017 **Bachelor's degree in Natural and Environmental sciences, Università degli studi dell'Insubria, Como (Co), Italy.**
Final degree mark: 106/110

Title *Implementation of a numerical model to predict active layer thickness: validated with geophysics and possible uses in alpine cryotic environment.*

Advisor Prof. Mauro Guglielmin

Co-Advisor Prof. Emanuele Forte

High School

2008–2014 **Scientific High School diploma, Liceo scientifico "Galileo Galilei", Como, Italy.**

Scientific papers

- Under Review **High frequency Lunar Penetrating Radar quality control, editing and processing of Chang'E-4 lunar mission.**
G. Roncoroni, E. Forte, I. Santin, A. Cernok, A. Rajsic, A. Frigeri, M. Pipan
submitted to Scientific Data, Under Review
- Under Review **Deep Learning driven interpretation of Chang'E4 Lunar Penetrating Radar.**
G. Roncoroni, E. Forte, I. Santin, A. Cernok, A. Rajsic, A. Frigeri, W. Zhao, M. Pipan
submitted to Journal of Geophysical Research: Planets, Under review
- Under Review **Deep Attributes: innovative LSTM-based seismic attributes.**
G. Roncoroni, E. Forte, M. Pipan
submitted to GJI, Under review.
- Oct 2023 **Multi-scale and multi-modal imaging study of mantle xenoliths and petrological implications.**
M. Venier, L. Ziberna, L. Mancini, A. Kao, F. Bernardini, G. Roncoroni, S. Milani, M. Youbi, M. Yondon, A. De Min, D. Lenaz.
AM, 2023, 10.2138/am-2022-8866
- Oct 2023 **Multi frequency data merging with bi-directional LSTM.**
G. Roncoroni, E. Forte, I. Santin, M. Pipan
GEOPHYSICS, 1-35., 10.1190/geo2023-0215.1
- Sep 2023 **GPR modelling and inversion to quantify the debris content within ice.**
I. Santin, G. Roncoroni, E. Forte, M. Pipan
Near Surface Geophysics, 2023, 1–15., 10.1002/nsg.12274
- Mar 2023 **Merging gated Frequency-Modulated Continuous-Wave Mars2020 RIMFAX GPR data.**
G. Roncoroni, E. Forte, M. Pipan
GEOPHYSICS, 2023, 88: A7-A12, 10.1190/geo2022-0466.1
- Dec 2022 **Polarity assessment of reflection seismic data: a Deep Learning approach.**
G. Roncoroni, E. Forte, L. Bortolussi, L. Gasperini and M. Pipan
BGO, Vol. 63, 2022, n. 4, 693-700, 10.4430/bgo00409
- Sep 2022 **Efficient extraction of seismic horizons with Deep Learning.**
G. Roncoroni, E. Forte, L. Bortolussi, M. Pipan
Computers & Geosciences, Volume 166, 2022, ISSN 0098-3004, 10.1016/j.cageo.2022.105190
- Jul 2021 **Synthetic seismic data generation with Deep Learning.**
G. Roncoroni, C. Fortini, L. Bortolussi, N. Bienati, M. Pipan
Journal of Applied Geophysics, 2021, 10.1016/j.jappgeo.2021.104347

Work Experience

- Nov 2021 - Internship at IPGP, Paris.
Mar 2022 Working on DL and FWI with Satish Singh
- Jun 2020 - P.I. CINECA-HPC, Principal Investigator on six projects on Cineca M100 and G100, Leonardo.
- Mar 2020 - Reviewer, Geophysics, Pure and Applied Geophysics, IEEE journals.
- Apr - Jun 2021 Seminars, University of Trieste, Italy.
Deep Learning and Geophysics
- Mar - Aug 2019 Internship at ENI spa, ENI, 5° palazzo uffici, San Donato Milanese, Milano, Italy.
Application of Convolutional Neural Network to Synthetic Seismic data.
Tutor: Carlo Fortini
- Sep - Dec 2018 Informatics Tutor, Università degli studi di Trieste, Trieste, Italy.
MATLAB for Geology students.

Jun 2013 - **Instructor and rescuer of acrobatic parks, San Bernardino**, Mesocco, Switzerland.
Sep 2018

Fieldwork Experience

- Nov 2023 **Field Acquisition, Kurdistan, Iraq.**
Magnetometer and GPR
- Jul 2022 **Field Acquisition, Carin Glacier, Italy.**
GPR
- Sep 2022 **Field Acquisition, Kurdistan, Iraq.**
Magnetometer
- Mar 2022 **Field Acquisition, Svalbard, Norway.**
Seismic and GPR

Talks given to international conferences

- Aug 2023 **Abstract at LofotenSeminarieret 2023, Lofoten, Norway.**
Looking beneath the surface of other planets by means of GPR: recent advances.
Authors: G. Roncoroni, E. Forte, M. Pipan
- Jul 2023 **Abstract at 6th PDW, Flagstaff, Arizona, USA.**
GPR Planetary Data Issues: Identification, Analysis, Possible solutions.
Authors: G. Roncoroni, E. Forte, M. Pipan
- Feb 2023 **Speaker at 41^o GNGT, Bologna, Italy.**
Deep Attributes 2.0: Extraction of Seismic features with Deep Learning.
Authors: G. Roncoroni, E. Forte, M. Pipan
- Jun 2022 **Abstract at GPR 2022, Golden, Colorado, USA.**
Multi frequency data merging with bi-directional LSTM.
Authors: G. Roncoroni, E. Forte, L. Bortolussi, M. Pipan
- Jun 2022 **Speaker at 40^o GNGT, Trieste, Italy.**
Deep Attributes: extraction of GPR statistical features with Deep Learning.
Authors: G. Roncoroni, E. Forte, L. Bortolussi, M. Pipan
- Jun 2021 **Speaker at 39^o GNGT, Online, Italy.**
Efficient automatic extraction of seismic horizons with Deep Learning.
Authors: G. Roncoroni, E. Forte, L. Bortolussi, M. Pipan
- Jun 2020 **Abstract at GPR 2020, Golden, Colorado, USA.**
Velocity analysis on common offset GPR data: a deep learning approach
Authors: G. Roncoroni, M. Dossi, E. Forte, M. Pipan, L. Bortolussi.
- Jun 2019 **Speaker at 38^o GNGT, Rome, Italy.**
Presentation on Synthetic seismic data generation using deep learning.
Authors: G. Roncoroni, L. Bortolussi, M. Pipan

Programming related courses (links for certificate)

- R and Python **Machine Learning and Data Analytics, Università degli studi di Trieste, Trieste, Italy.**
[LINK](#)
- Python **Python 3 Programming, University of Michigan, on coursera platform.**
[LINK](#)
- Deep Learning **An Introduction to Practical Deep Learning, INTEL, on coursera platform.**
[LINK](#)
- OpenCL **Introduction to OpenCL on FPGAs, INTEL, on coursera platform.**
[LINK](#)
- Python **Introduction to Graph Neural Networks, NVIDIA.**
- Python **Introduction to Physics-informed Machine Learning with Modulus, NVIDIA.**
- Python **Python for HPC, ICHEC.**
- Python **Python and scikit-learn for HPC, IT4Innovations.**

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✉ groncoroni@units.it

QC Introduction to Quantum Computing school, CINECA.
C++/F90 Summer school on parallel Computing, CINECA.

Computer skills

Basic C++, SQL, Shell script, OpenCL, R
Intermediate Fortran90, QGIS, LaTeX, Office package, Linux
Advanced Python, Matlab

Languages

Italian Native speaker
English C1
German A1

B2 certified

Other skills

DAE operator
Drone licence
Driving licence

certified

A1/A3

B

Trieste, 16 November 2023

GIACOMO RONCORONI

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