Gabriele Benedetti

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Github: https://github.com/gbene

Date of birth: 28/01/1999 **Nationality:** Italian

WORK EXPERIENCE

[23/02/2023 – Current] **University research assistant**

University of Milano-Bicocca

City: Milan

Country: Italy

Development of python codes to help analyze fractured rock systems and create stochastic DFNs in a tightly knit cooperative environment. Main research interest:

1. Right censoring bias correction for fracture length parameter estimation
2. Point cloud segmentation procedures for fracture planes extractions
3. Stochastic DFN parameter calibration

[05/05/2022 – 10/02/2023] **Programmer**

PRO ITER Ambiente s.r.l.

City: Milan

Country: Italy

- Created new tools and functions for the PZero 3D geological modelling software to streamline the output of geological models for CAD/BIM environments.
- Involved in non academic geological applications by working with a team of experts in civil and environmental engineering.

EDUCATION AND TRAINING

[05/10/2020 – 05/10/2022] **MSc Geology and Geodynamics**

University of Milano-Bicocca https://www.unimib.it/

City: Milan

Country: Italy

Field(s) of study: Natural sciences, mathematics and statistics: *Earth sciences*

Final grade: 110/110 Cum laude

Type of credits: ECTS **Number of credits:** 122

Thesis: New tools for Digital Outcrop Models analysis: Implementation for the PZero software

The Masters degree in Geology and Geodynamics establishes a basis to analyze and understand deep geological processes at the local and regional scale using both surface and subsurface data.

- Strengthened core geology concepts by following numerical and data driven courses such as applied geophysics, 3D geo-modelling and GIS/remote sensing.
- Developed an open source 3D modelling geological software written entirely in Python as Master thesis.

[02/10/2017 – 02/10/2020] **BSc Geological Sciences and Geo-technologies**

University of Milano-Bicocca https://www.unimib.it/

City: Milan

Country: Italy

Field(s) of study: Natural sciences, mathematics and statistics: *Earth sciences*

Final grade: 107/110

Type of credits: ECTS **Number of credits:** 180

Thesis: Photogrammetric techniques applied to invertebrate paleontology

The Bachelors degree in Geological Sciences and Geo-technologies has the aim to lay a solid methodological background in all fundamental disciplines of the Earth Sciences.

- Sparked an interest for modern approaches, such as 3D modelling and coding by having hands on experience with different 3D manipulation software and subjects.

PUBLICATIONS AND WORKS

[19/05/2023 – Current] **FracAbility: A python toolbox for survival analysis in fractured rock systems**

Article in writing

New python toolbox that to investigate both topology and fracture lengths distributions corrected for right-censoring bias in digitalized fracture networks.

Link: https://github.com/gbene/FracAbility

[17/10/2023 – Current] **Quantification of coplanarity: application for plane segmentation algorithms in Digital Outcrop Models**

Article in writing

A new simple method to quantify coplanarity to correct and guide the merging process of facets obtained from point cloud segmentation algorithms.

[19/09/2023 – 21/09/2023] **Methods for merging fragmented facets obtained from point cloud segmentation algorithms**

SIMP, SGI, SOGEI, AIV Joint National Congress presentation

Presented new methods for guiding the merging process of facets obtained from point cloud segmentation algorithms.

[23/04/2023 – 28/04/2023] **Point cloud analysis and segmentation procedures in the PZero software**

EGU 2023 Master thesis poster presentation.

Benedetti, G., Casiraghi, S., Bistacchi, A., Arienti, G., and Bertolo, D.: Point cloud analysis and segmentation procedures in the PZero software, EGU General Assembly 2023, Vienna, Austria, 24–28 Apr 2023, EGU23-9549, https://doi.org/10.5194/egusphere-egu23-9549, 2023.

Link: https://meetingorganizer.copernicus.org/EGU23/EGU23-9549.html

LANGUAGE SKILLS

Mother tongue(s): Italian

Other language(s):

English

LISTENING C2 **READING** C2 **WRITING** C1

SPOKEN PRODUCTION C1 **SPOKEN INTERACTION** C1

Levels: A1 and A2: Basic user; B1 and B2: Independent user; C1 and C2: Proficient user

DIGITAL SKILLS

Programming Languages

Python (Advanced) | MATLAB (Good) | JuliaLang (Basic) | C++ (Basic) | JavaScript (Basic)

Software

Agisoft Metashape | Geographical Information Systems (GIS) | 3D Geological modelling (SKUA, Petrel, MOVE) | Blender | KiCAD, FreeCAD

Technologies

Linux | Git | Pandas, NumPy, SciKit-Learn, Geopandas, Seaborn, Matplotlib, Folium, plotly | VTK | PyVista | LaTeX

HOBBIES AND INTERESTS

Gardening

Photography

Hiking

Music