**Nicolò Bertone**

Date of birth: 26 / 06 / 1993

Nationality: Italian

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**SUMMARY**

Nicolò Bertone obtained a Bachelor's degree in Earth Sciences from the University of Turin in 2016 with a thesis on palaeomagnetism entitled: “Magnetic measurements on soils of the Morainic Amphitheater of Rivoli-Avigliana”. During his Bachelor's degree, he carried out several geological surveys and sampling campaigns in the regions of Piedmont and Umbria and in the surroundings of Naples.

He holds a Master's degree in Geosciences (curriculum: Geophysics) from the Department of Mathematics and Geosciences (hereafter DMG) - University of Trieste, 110/110 cum laude. The subject of his Master's thesis is the processing and interpretation of seismic reflection profiles in the Otranto Channel (South Adriatic Sea ) in order to correlate deep and shallow structures and characterise the margins of the Apulia carbonate platform . His Master's thesis was developed under an agreement between DMG and the Istituto Nazionale di Oceanografia e Geofisica Sperimentale (OGS) for academic internships.

In November 2018, he won the SEG Challenge Bowl 2018 (international quiz competition on Earth Sciences organised by SEG - Society of Exploration Geophysicists) during the 37° GNGTS (Gruppo Nazionale di Geofisica della Terra Solida) Congress (Bologna). In September 2019, he participated in the 2019 SEG Challenge Bowl Finals in San Antonio (TX, USA) during the annual Society of Exploration Geophysicists Congress.

Since May 2019, he has a research fellowship (Borsa per l'avviamento alla ricerca) at the University of Trieste - Department of Mathematics and Geosciences. The aim of his fellowship is to interpret seismic reflection data - supported by analogue models - of the Friuli region and adjacent areas in order to better understand the interaction between Dinaric and Alpine structures.

In May 2023, Nicolò Bertone obtained the PhD in "Earth Sciences, Fluid-Dynamics and Mathematics. Interactions and Methods" at the University of Trieste with a thesis entitled: "Geometry and kinematics of the Cyprus Arc system". His PhD project focused on the study of the Eastern Mediterranean active tectonics and the importance of structural ineheritances when different crustal domains are involved along a convergent boundary.

Since February 2023 he has been working as a freelance geophysicist in close collaboration with Anfibia srl and Esplora srl (spin-off of the University of Trieste). During this time he has deepened his knowledge of various near-surface geophysical techniques (e.g. FDEM methods, GPR, ERT, seismic refraction) for different purposes such as: Riverbank risk assessment, archaeological prospection, unexploded ordnance prospection, subservices prospecting and foundation consolidation assessment.

**PROFESSIONAL ACTIVITIES**

**July 2023 – Today**

Research fellow

Topic: Analysis and monitoring of the integrity of the embankments of the Apennine rivers. The case of the Panaro River (Tutor: Lisa Borgatti)

Alma Mater Studiorum - University of Bologna - Department of Civil, Chemical, Environmental, and Materials Engineering

**February 2023 – June 2023**

Freelance geophysicist

 Collaboration with Anfibia srl & Esplora srl (spin-off of the University of Trieste)

**November 2019 – May 2023**

PhD student

 University of Trieste - Department of Mathematics and Geosciences

 XXXV cycle: Earth Science, Fluid-Dynamics and Mathematics. Interactions and Method

 Thesis title: *Geometry and kinematics of the Cyprus Arc system*

 Research Field: seismic interpretation, structural geology and analogue modeling

**May 2019 – November 2019**

Research fellow

Topic: Stratigraphic and structural reconstruction of the Dinaric and Alpine anticlines via seismic reflection data interpretation and analogue modeling (Tutor: Maurizio Ponton)

University of Trieste – Department of Mathematics and Geosciences

**STUDIORUM**

**March 2019**

Master’s degree in Geophysics

 University of Trieste – Department of Mathematics and Geosciences - Course: Geophysics

 Thesis title: *Geophysical study of the Otranto Channel*.

The master’s thesis was born by the framework collaboration between OGS – Istituto Nazionale di Oceanografia e Geofisica Sperimentale and DMG – Department of Mathematics and Geosciences

 Vote: 110 L

 Related activities – fieldworks:

* Academic traineeship at the OGS: seismic processing of 4 marine multi-channel seismic lines of the OCSS15 project carried by OGS and reprocessing of the MS29 “vintage” multi-channel seismic line.
* Sampling campaign in Sesia Valley (NW Italy) and production of thin section mainly of kinzigite, paragneiss and minor granite.

**April 2016**

Bachelor’s degree in Earth Science

 University of Turin – Department of Earth Science - Course: Geology

Thesis title: *Magnetic measurements on soils of the Morainic Amphitheater of Rivoli-Avigliana.*

The bachelor’s thesis was made within the collaboration between Doc. Brent Ward of the University of Vancouver, the DISAFA – Pedological Institute of the University of Turin and the ALP - Alpine Laboratory of Paleomagnetism of Peveragno (CN).

Vote: 100

Related activities – fieldworks:

Geological surveys and drafting of the accompanying geological maps:

* Alta Langa area, near the municipality of Cortemilia (CN) – Piedmont – IT
* Susa Valley, Mt. Pramand – Oulx (TO) – Piedmont – IT

Paleomagnetic sampling:

* Clay samples beside the Tanaro River near Pollenzo (CN) – Piedmont – IT
* Coring of ignimbrite and tuff near Naples (NA) – Campania – IT

Laboratory activities at the ALP - Alpine Laboratory of Paleomagnetism of Peveragno (CN) - IT

**June 2012**

Scientific diploma of secondary education

 Liceo Scientifico Statale “L. Cocito” – Alba (CN)

**PUBLICATIONS**

**Bertone N.**, Bonini L., Del Ben A., Brancatelli G., Camerlenghi A., Forlin E. & Pini G. A. (*in prep*). *Cenozoic evolution of the North-Eastern Mediterranean Basin*.

Consorti L., Corradetti A., Hadi M., Franceschi F., Sabbatino M., Bensi S., **Bertone N.** & Bonini L. (*under review*). *Biostratigraphic investigations assisted through virtual outcrop modeling: a case study from an Eocene shallow-water carbonate succession (Val Rosandra gorge, Trieste, NE Italy)*. Italian Journal of Geosciences.

Bonini L., Fracassi U., **Bertone N**., Maesano F. E., Valensise G. & Basili R. (2023). *How do inherited dip-slip faults affect the development of new extensional faults? Insights from wet clay analog models*. Journal of Structural Geology. Elsevier. <https://doi.org/10.1016/j.jsg.2023.104836>

Brancatelli G., Forlin E., **Bertone N.**, Del Ben A., & Geletti R. (2022). Time to depth seismic reprocessing of vintage data: A case study in the Otranto Channel (South Adriatic Sea). In Interpreting Subsurface Seismic Data (pp. 157-197). Elsevier. <https://www.sciencedirect.com/science/article/pii/B9780128185629000091>

**CONGRESSES**

Conference proceedings. Oral presentation presented by: Bertoni C.

Bertoni C., **Bertone N**., Bonini L., Camerlenghi A., Del Ben A., Madof A., Vattovaz M. & Walker R. T. (2023). *Active faulting in the eastern and central Mediterranean basin.* INQUA 2023, Rome, 14 – 20 July 2023.

Conference proceedings. Oral presentation presented by: Bonini L.

Bonini L. & **Bertone N.** (2023). *The use of collaborative robots (cobots) in an analog modeling laboratory*. EGU General Assembly 2023, Wien, 23-28 April 2023.

Poster presented by: Bonini L.

Vattovaz M., **Bertone N.**, Bertoni C., Bonini L., Camerlenghi A., Del Ben A. & Walker R. T. (2023). *Geometry and kinematics of the active structures along the Latakia Ridge (Cyprus Arc)*. EGU General Assembly 2023, Wien, 23-28 April 2023.

Extended abstract. Corresponding author and oral presentation presented by: **Bertone Nicolò**

**Bertone N.**, Bonini L., Del Ben A., Colin E., Brancatelli G., Camerlenghi A., Forlin E., Klaeschen D. & Pini G. A. (2023). *Geometry and kinematics of the Cyprus Arc system.* Extended abstract, 41° GNGTS (Gruppo Nazionale di Geofisica della Terra Solida), Bologna 7-9 February 2023.

Extended abstract. Corresponding author and oral presentation presented by: **Bertone Nicolò**

**Bertone N.**, Bonini L., Del Ben A., Brancatelli G., Camerlenghi A., Forlin E. & Pini G. A. (2022) - *Present-day coexistence of different convergent boundaries along the Cyprus Arc.* Extended abstract, YORSGET 2022, Catania 30 June – 4 July 2022.

Conference proceedings. Corresponding author and oral presentation presented by: **Bertone Nicolò**

**Bertone N.**, Bonini L., Colin E., Del Ben A., Brancatelli G., Camerlenghi A., Forlin E. & Pini G. A. (2022). *Subduction hints from the northeastern Mediterranean Sea* (No. EGU22-8675). Copernicus Meetings. <https://meetingorganizer.copernicus.org/EGU22/EGU22-8675.html>

Extended abstract. Corresponding author and oral presentation presented by: **Bertone Nicolò**

**Bertone N.**, Bonini L., Del Ben A., Brancatelli G., Camerlenghi A., Forlin E., Klaeschen D. & Pini G. A. (2021) - *Structural inheritance in the Northeastern Mediterranean basin.* 90° Congresso Società Geologica Italiana – Trieste September 2021. [*https://www.socgeol.it/files/download/pubblicazioni/Abstract%20Book/Abstract%2090mo%20Congresso%20SGI\_06-09-21.pdf*](https://www.socgeol.it/files/download/pubblicazioni/Abstract%20Book/Abstract%2090mo%20Congresso%20SGI_06-09-21.pdf)

Extended abstract. Oral presentation presented by: Poli M. E.

Poli M. E., Bonini L., Busetti M., Piano C., Marchesini A., Civile D., Dal Cin M., Paiero G. Patricelli G., Ponton M., Areggi G., Bensi S., **Bertone N**., Del Ben A., Massari G., Pini G. A., Rebez A., Santulin M., Tamaro A., Zampa L. S. & Zanferrari A. (2021). *Database of active faults in Friuli Venezia Giulia: a basic tool for seismic hazard assessment.* 90° Congresso Società Geologica Italiana – Trieste September 2021. [*https://www.socgeol.it/files/download/pubblicazioni/Abstract%20Book/Abstract%2090mo%20Congresso%20SGI\_06-09-21.pdf*](https://www.socgeol.it/files/download/pubblicazioni/Abstract%20Book/Abstract%2090mo%20Congresso%20SGI_06-09-21.pdf)

Conference proceedings. Corresponding author and oral presentation presented by: **Bertone Nicolò**

**Bertone N.**, Bonini L., Del Ben A., Brancatelli G., Camerlenghi A., Forlin E., Klaeschen D. & Pini G.A. (2021) – *Late Mesozoic – Cenozoic evolution of the eastern Cyprus offshore.* EGU General Assembly 2021, Online, 19-30 April 2021, [10.5194/egusphere-egu21-12428](https://doi.org/10.5194/egusphere-egu21-12428)

Extended Abstract. Oral presentation presented by: Del Ben A.

Del Ben A., Geletti R., **Bertone N.**, Brancatelli G., Forlin E. & Mocnik A. (2020) - *New seismic data on the carbonate platform structures in the Otranto Channel (South Adriatic Sea)*. 82nd EAGE Conference and Exhibition 2020, Jun 2020 (postponed 2021).

Conference proceedings. Oral presentation presented by: Forlin E.

Forlin E., Brancatelli G., **Bertone N.**, Del Ben A. & Geletti R. (2020) - *Time reprocessing and depth imaging of vintage seismic data: The Southern Adriatic Sea case study*. EGU General Assembly 2020, Online, 4–8 May 2020, [10.5194/egusphere-egu2020-7164](https://meetingorganizer.copernicus.org/EGU2020/EGU2020-7164.html)

Conference proceedings. Oral presentation presented by: Bonini L.

Bonini L., Basili R., **Bertone N.**, Fracassi U., Maesano F. E. & Valensise G. (2020) - The effect of pre-existing faults on the development of extensional basins: insights from wet clay experiments. EGU General Assembly 2020, Online, 4–8 May 2020, EGU2020, [10.5194/egusphere-egu2020-8516](https://doi.org/10.5194/egusphere-egu2020-8516).

Conference proceedings. Corresponding author and oral presentation presented by: **Bertone Nicolò**

**Bertone N.**, Bonini L., Basili R., Del Ben A., Maesano E. M., Tiberti M. M. & Pini G. A. (2020) - *Evolution of tear faults in subduction zones: an analogue modelling perspective*. EGU General Assembly 2020, Online, 4–8 May 2020, EGU2020, [10.5194/egusphere-egu2020-7608](https://doi.org/10.5194/egusphere-egu2020-7608).

Poster presented by: **Bertone Nicolò**

**Bertone N.**, Del Ben A., Camerlenghi A., Forlin E. & Hübscher C. (2020) - *Fluid modeling in the pre-MSC: Ionian Abyssal Plain.* MedSalt Final Symposium, Piran 25-27 February 2020.

Extended abstract. Oral presentation presented by: Bonini L.

Bonini L., **Bertone N.**, Del Ben A., Areggi G., Ponton M. & Pini G. A. (2019) – *Seismotectonic model of the Montello area (northeast Italy) derived from seismic reflection data.* Extended abstract, 38° GNGTS (Gruppo Nazionale di Geofisica della Terra Solida), Rome 12-14 November 2019. [http://www3.inogs.it/gngts/index.php/15-pagina-sessione-2019/75-2019-1-1](%20http%3A/www3.inogs.it/gngts/index.php/15-pagina-sessione-2019/75-2019-1-1)

Extended abstract. Corresponding author and oral presentation presented by: **Bertone Nicolò**

**Bertone N.**, Del Ben A., Camerlenghi A. & Hübscher C. (2019) - *Fluid modeling below Messinian salt deposits: Ionian Abyssal Plain & Malta Escarpment base.* Extended abstract, 38° GNGTS (Gruppo Nazionale di Geofisica della Terra Solida), Rome 12-14 November 2019. [http://www3.inogs.it/gngts/index.php/15-pagina-sessione-2019/82-2019-3-1 /](http://www3.inogs.it/gngts/index.php/15-pagina-sessione-2019/82-2019-3-1%20/) /

Extended abstract. Corresponding author and oral presentation presented by: **Bertone Nicolò**

**Bertone N.**, Del Ben A., Brancatelli G. & Geletti R. (2019) - *Geophysical study of the Otranto Channel.* Extended abstract, 38° GNGTS (Gruppo Nazionale di Geofisica della Terra Solida), Rome 12-14 November 2019. [http://www3.inogs.it/gngts/index.php/15-pagina-sessione-2019/82-2019-3-1 / /](http://www3.inogs.it/gngts/index.php/15-pagina-sessione-2019/82-2019-3-1%20/%20/)

Extended abstract. Corresponding author and oral presentation presented by: **Bertone Nicolò**

**Bertone N.**, Brancatelli G., Geletti R. & Del Ben A. (2018) - *Pre-Stack Depth Migration using two different tomographic techniques: the Otranto Channel case study*. Extended abstract, 37° GNGTS (Gruppo Nazionale di Geofisica della Terra Solida), Bologna 19-21 November 2018. <http://www3.inogs.it/gngts/index.php/14-pagina-sessione-2018/71-2018-3-1>

**AWARDS**

Attendance at the SEG Challenge Bowl Finals in San Antonio (TX) in September 2019.

Winner of the SEG Challenge Bowl 2018 – Bologna (IT).

**RESEARCH PROJECT PARTECIPATION**

2021 – 2023: *progetto CARG – Fogli n. 110 Trieste e n. 131 Caresana*. *Foglio 088 Gorizia* (GEO/03 - GEO/11).

2019 - 2021: *Faglie Attive Friuli Venezia Giulia e aree limitrofe*, a collaborative project between the Department of Mathematics and Geosciences (University of Trieste), the OGS, the University of Udine and the Geological Service of the Regione Friuli Venezia Giulia. (GEO/03 – GEO/11). <https://www.regione.fvg.it/rafvg/cms/RAFVG/ambiente-territorio/geologia/FOGLIA35/>

2019: *Approfondimento delle conoscenze geologiche del Carso Classico*, a collaborative project between the Department of Mathematics and Geosciences (University of Trieste) and the Geological Service of the Regione Friuli Venezia Giulia. (GEO/03 - GEO/11).

OCSS\_15 project – *Otranto Channel gaS Seepages* – collaboration with OGS (Istituto Nazionale di Oceanografia e Geofisica Sperimentale). (GEO/10 – GEO/11).

**WORKSHOP & SUMMER SCHOOL**

* “The role of the geoscientist in the energy transition” at the University of Camerino (IT)
* “Stratigrafia sequenziale: principi ed applicazioni tramite analisi sismo-stratigrafiche e palinologiche” at the University of Firenze (IT)
* “Lithosphere Dynamics and Tectonics of Sedimentary Basin” at the University of Utrecht
* Academic English course at the University of Trieste (IT)
* EAGE workshop - Third Eastern Mediterranean Workshop in Larnaca, Cyprus (1 – 3 December 2021).
* Active Faults / SEG Geophysics Field Camp in the Southern Italy 2021 – SEG student chapter Naples (IT)
* ETN SaltGiant short course “Numerical modeling in Earth Sciences” at the Utrecht University (NL)
* Decision Space Geoscience course at the Halliburton Co. in San Donato Milanese (IT)
* SEG course – Structural geology in seismic interpretation (Online)
* Description of marine core and creation of stratigraphic sections at the Core Logging Lab – DMG University of Trieste (IT).

 **TEACHING AND OUTREACH ACTIVITIES**

Technician and student’s tutor at the SMOLAB – Small-scale MOdeling of geological processes LABoratory (analogue modeling laboratory of the DMG - University of Trieste).

Co-supervisor of BSc and MSc:

Agnese Ciolli (MSc) – Meccanismi di deformazione passiva connessi con la mobilitazione gravitativa di depositi evaporitici messiniani nel Mediterraneo Orientale. (GEO/10 – GEO/11).

Eugenia Colin (MSc) – The Western Cyprus Arc: tectonic structures and their relationship with the subduction zone dynamics. (GEO/10 – GEO/11).

Marco Re (MSc) – Kinematic efficiency of Riedel shears: insights from analog models and natural cases. (GEO/10).

Giacomo Rovere (BSc) – Influenza di faglie pre-esistenti nello sviluppo di nuovi sistemi estensionali: analisi mediante modellazione analogica. (GEO/3)

Agnese Ciolli (BSc) – Ipotesi di sviluppo ed evoluzione di sistemi di faglie di lacerazione (tear faults) in ambienti di subduzione: analisi mediante la modellazione analogica. (GEO/03).

**TECHNICAL SKILLS**

**Practical:**

Competent user of some geophysical instruments and related processing and interpretation softwares as:

* CMD Explorer (FDEM conductivimeter) / EM4SOIL
* MiniMIRA (3D GPR) / rSlicer
* Syscal Pro (ERT) / Prosys II
* Seismic Refraction methods (active and passive)
* DAVID Laserscanner

 **Software:**

Competent user of some geological software as:

* MOVE (Petroleum Experts)
* CorelDraw
* Surfer
* SonarWiz
* AutoCAD
* QGis
* IHS Kingdom
* Petrel (Schlumberger)
* PIVlab (Digital Image Correlation software)
* Decision Space (Landmark)
* Paradigm Suite (Echos, GeoDepth, Velocity Navigator, Canvas)

Basic knowledge of Python programming language and programming of Universal Robot (UR5e - collaborative robotic harm).

**LANGUAGES**

Native language:

Italian

Other languages:

English: listening B2, reading C1, spoken interaction B2, spoken production B2, writing B2.

French: listening B1, reading B1, spoken A2, writing A1.

**DRIVING LICENSES**

B – A

**HOBBIES AND SPORTS**

Rock climbing, mountain bike, trekking, kayaking, snowboard and skiing, frisbee and juggling.

**EXTRA-ACADEMIC WORK EXPERIENCES**

During the university years, I gave private lessons to students in need of help concerning scientific subjects and english language (spoken and written exercises).

November 2018 Handyman

 Associazione “Musica Libera” – Via Carducci 24, Trieste, Italy.

 Business or sector: Organization of events about music, purchase and sale of vinyls.

October 2017 Handyman

 Associazione Triestedivertigioco – Via del lavatoio 4, Trieste, Italy.

 Business or sector: Organization of events about comics.

November 2017 Handyman

 Associazione “Musica Libera” – Via Carducci 24, Trieste, Italy.

 Business or sector: Organization of events about music, purchase and sale of vinyls.

2016 Barman / Waiter

Locanda Gaudemus – Località Sistiana 57, Sistiana, Italy.

Business or sector: Catering service

January 2016 Barman / Waiter

PURO – Piacere Unico Ristoro Originale – Via Torino 31, Trieste, Italy

Business or sector: Catering service.

July 2011 Barman / Waiter

Birroteca Terzo Tempo – Via Calissano 3, Alba, Italy

Business or sector: Restaurants, pub.

July 2010 Office work

Mollo Noleggio – Corso Canale, Mussotto d’Alba, Italy.

Business or sector: Secretarial work and warehouseman.

July 2009 Car mechanic

Mirko Autoriparazioni di Fascinato Mirko - via Roma 53, Piobesi d'Alba, Italy.

Business or sector: Assistant

July 2008 Handyman

Les Prairies de la Mer - Riviera Villages - 1910 Route du Littoral, 83310 Grimaud, France.

Business or sector: Public relations, cleaning mobil-homes and discotheque of the camping.