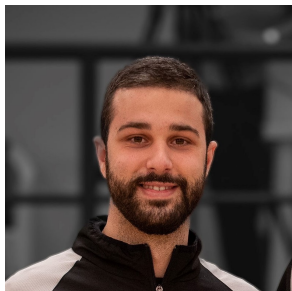


PERSONAL INFORMATION

Gaetano Settembre



📍 Department of Mathematics, Via E. Orabona, 4 - 70125, Bari (BA), Italy

☎ +39 080-5443387, int: 3387

✉ gaetano.settembre@uniba.it

🌐 www.linkedin.com/in/gaetano-settembre/

🆔 ORCID [0000-0002-0592-8575](https://orcid.org/0000-0002-0592-8575)

Gender Male | Nationality Italian

About me

PhD Student in Computer Science and Mathematics. IT and data enthusiast with an interest in Data Analysis, Machine Learning, and full-stack development.

Passionate about new technology learning, exploration and engineering with strong interpersonal skills and auto didactic tendencies. I've developed a particular interest in research during my internship at Institute of Crystallography, in which I have written my thesis. I would love to advance my understanding multi/hyperspectral data analysis further, through PhD study and with experts in the field.

WORK ACADEMIC EXPERIENCE

Feb 2023 – Present

Company stage

Planetek Italia S.r.l.

Via Massaua, 12, - 70132 Bari, Italy

- Training academy: basics, data acquisition, processing and analysis of remote sensing data
- Analysis of the domain and hyperspectral data in order to understand the potential of Low-Rank Approximation-based methods in the sector
- Definition and development of a methodology based on low-rank approaches to analyze and process PRISMA (PRecursore IperSpettrale della Missione Applicativa) hyperspectral data [1,2]
- Support activities for the definition and prototyping of a workflow in order to generate land cover change maps

Oct 2021 – Mar 2022

Curricular Internship

Institute of Crystallography c/o CNR

Via Giovanni Amendola, 122/O - 70126, Bari, Italy

- ETL (Extract, Transform, Load) process of crystallographic data from open source databases
- Exploratory analysis of crystallographic data and non-parametric statistical tests
- Training, evaluation and tuning of ML (Machine Learning) models for crystal system determination (multi-class classification task)
- High-performance Models Deployment and development of Web Platform called CrystalMELA (Crystallography MachinE LeArning) [3]

Nov 2018 – Apr 2019

Curricular Internship

SER&Practices (SER&P)

Via Edoardo Orabona, 4 - 70125, Bari, Italy

- Development of "Serious games" following the Red Team vs. Blue Team approach to improve the skills of the SOC (Security Operation Center) and CSIRT (Computer Security Incident Response Team) team
- Stu of malicious attack scenarios on Linux Servers and Web Applications with the intention of extracting sensitive data using the Cyber Kill Chain framework
- Penetration Test and Vulnerability Assessment
- Data collection, data analysis (logs, alerts, etc.) and reporting using the IBM Security QRadar SIEM

EDUCATION

Oct 2022 — Present **PhD Student in Computer Science and Mathematics**

University of Bari "Aldo Moro", Department of Mathematics, Italy

Info: PhD Scholarship winner D.M. 352/22 in agreement with the company Planetek Italia Srl, for Curriculum 2 Mathematics (MAT/08), with theme bound by title: "*Low-rank models for the analysis of Earth Observation data focusing on coastal and marine environments*";

Supervisor(s): Prof. Nicoletta del Buono (academic sup.), Dr. Nicolò Taggio (industrial sup.).

Oct 2019 — Mar 2022 **Master's Degree in Data Science (LM-91)**

University of Bari "Aldo Moro", Department of Computer Science, Italy

Final grade: Full mark with honors - 110/110 & Lode (highest possible grade in the Italian system).

Thesis: "Analisi di dati cristallografici e costruzione di modelli predittivi". Supervisors: Prof. Nicoletta Del Buono; Dr. Rosanna. Rizzi, Dr. Nicola Corriero

PA Code: 02-0000681044-0002282158

Sep 2015 — Apr 2019 **Bachelor's Degree in Computer Science (L-31)**

University of Bari "Aldo Moro", Department of Computer Science, Italy

Thesis: Red Team vs Blue Team: Data Exfiltration in Government". Supervisor: Prof. Danilo Caivano

PA Code: 02-0000681044-0002288080

Aug 2010 — Jul 2015 **High School for Scientific Studies**

High School "G. Tarantino", Applied Science/s curricula, Gravina in Puglia, Italy

CERTIFICATIONS AND COURSES

- | | | |
|----------|---|--------------------------|
| Oct 2022 | – "Satellite systems for remote sensing and geolocation" | Polytechnic of Bari |
| | Quarterly course held by the Prof. Fabio Bovenga (Researcher at CNR-IREA) | |
| Oct 2022 | – Synthetic Aperture Radar (SAR) remote sensing | Planetek Italia |
| | – Processing of remote sensing data | Planetek Italia |
| | – Basics of remote sensing | Planetek Italia |
| | The courses were attended through EO-Learning, the e-learning platform on Earth Observation, passing the final evaluation test and issuing a certificate. | |
| Apr 2022 | – Machine Learning with Python | IBM |
| | Certificate ID Number: 968f2ab5ed844758b714235e98b5e287 | |
| | – Deep Learning Essentials | IBM |
| | Certificate ID Number: 14c4279c8c934daa825c07eb61df8587 | |
| Oct 2021 | – Data Analysis using Python | IBM |
| | Certificate ID Number: caf35b5e29d44ab4a5239bfd607fd182 | |
| | – Data Visualization using Python | IBM |
| | Certificate ID Number: 0355a89d6c694ed8bc46eb00e9112452 | |
| | – Data Science Methodologies | IBM |
| | Certificate ID Number: acef4f90bcbe449782e429a1146a2a49 | |
| | – Data Science Foundations - Level 1 and 2 (V2) | IBM |
| | Certificate ID Number: c429ffdd4c3e470185e528830c3e1e35 | |
| May 2020 | – Corso "Sicurezza e Tutela della salute dei lavoratori" (Generale) | University of Bari |
| | Certificate Code: oJMByztiAg | |
| Dec 2019 | – Basic Course GDPR Regulation 679/2016 | Dati360.it - Legal Suite |
| | Certificate Code: 7cb536a6-6a41-49d6-ac84-e723fc7339ac | |
| Jul 2019 | – 2-day QRadar BP Technical Enablement course | IBM and SERLAB |

Sep 2018 – **English Assessment (Internal certification)** University of Bari

May 2013 – **European Computer Driving Licence (ECDL) Full Standard Certificate** AICA
Certificate Code: IT 1969501, Skill Card: 1969501

Info: All badges of verified achievements from IBM are available at the following link:
<https://www.credly.com/users/gaetano-settembre/badges> (Credly profile).

NETWORKS AND MEMBERSHIP

May 2024 – Current **IEEE** - Student member IEEE, IEEE Geoscience and Remote Sensing Society

Jan 2023 – Current **INDAM-GNCS Research Group** - National Institute of High Mathematics (INdAM) – National Group for Scientific Calculation (GNCS).

Dec 2022 – Current **PRIMO Research Group** - (Post graduate Researchers in Inverse problems, Machine learning and Optimization).

Oct 2021 – Current **Mathematics In Data Analysis** - (MIDAS) research group at the University of Bari "Aldo Moro", Italy, currently coordinated by Prof. N. Del Buono.

PROJECTS

Mar 2024 Low-rank models and Optimization algorithms for Data Analysis (GNCS funded). Coordinator: *Prof. Margherita Porcelli*

Oct 2023 Marine Biomass Innovation (MBI) project. Team Lead: *Dr. Flavia Esposito*

HONOURS AND AWARDS

Oct 2020 Referee authorized to officiate "Serie C Gold" (men) and "Serie B" (women) basketball games.

Oct 2018 Referee authorized to officiate "Serie C Silver" basketball matches.

Oct 2013 Institute representative - High School "G. Tarantino".

LANGUAGE SKILLS

Mother tongue Italian

Other languages

UNDERSTANDING		SPEAKING		WRITING
Listening	Reading	Spoken interaction	Spoken production	
B1	B1	B1	B1	B1

English Assessment (Internal certification) issued by University of Bari

Levels: A1 and A2: Basic user – B1 and B2: Independent user – C1 and C2: Proficient user
[Common European Framework of Reference for Languages](#)

DIGITAL SKILLS

Languages Python, Java, JavaScript, C/C++, R, MATLAB, HTML, PHP, CSS, LaTeX

Database MySQL, PostgreSQL + PostGIS, MongoDB, Neo4j

Versioning Git, SVN

Geo QGIS, ArcGis, rasterio, gdal, xarray,

Data Science scikit-learn, numpy, pandas, tensorflow, pytorch, matplotlib, seaborn, Tableau, Apache Spark, spaCy, NLTK, Data mining e machine learning: Knime, Weka, Orange

IDE Visual Studio / Visual Studio Code, PyCharm, Eclipse, NetBeans, RStudio, Jupyter, Google Colab

Applications Microsoft Office Suite, Collaborative tools (Trello, Slack, Microsoft Teams), AutoCAD 2D/3D

OSs Windows, Unix Linux

OTHER INFORMATION

Driving licence B

PUBLICATIONS

- [1] **Enhanced MRI brain tumor detection and classification via topological data analysis and low-rank tensor decomposition**
S.G. De Benedictis, G. Gargano, **G. Settembre**. *Journal of Computational Mathematics and Data Science*, vol. 13 (2024), p.100103. doi: 10.1016/j.jcmds.2024.100103.
- [2] **Deep NMF and Autoencoder: a Comparative Analysis for Hyperspectral Unmixing using PRISMA Real Images**
G. Settembre, N. Del Buono, F. Esposito and N. Taggio. *IGARSS 2024 - 2024 IEEE International Geoscience and Remote Sensing Symposium*, Athens, Greece, 2024, pp. 3708-3712, doi: 10.1109/IGARSS53475.2024.10642930.
- [3] **Low-rank hierarchical clustering of PRISMA hyperspectral images to identify burned areas**
G. Settembre, N. Taggio, N. Del Buono, A. Aiello, F. Esposito. *International Workshops of ECML PKDD 2023, Turin, Italy, September 18–22, 2023, Revised Selected Papers, Part III in Communications in Computer and Information Science*, vol 2135 (IN PRESS).
- [4] **CrystalMELA: A new Crystallography Machine Learning platform for crystal system determination**
N. Corriero, R. Rizzi, **G. Settembre**, N. Del Buono and D. Diacono in *Journal of Applied Crystallography (IUCr)*, vol. 56, no. 2, Jan. 2023, doi: 10.1107/S1600576723000596.
- [5] **Machine Learning approaches for predicting Crystal Systems: a brief review and a case study**
G. Settembre, N. Corriero, N. Del Buono, F. Esposito, and R. Rizzi. In *Conference proceedings Machine Learning, Optimization, and Data Science. LOD 2022. Lecture Notes in Computer Science*, vol 13810, pp. 93-107. Springer, Cham. doi: 10.1007/978-3-031-25599-1_8.

REVIEWING ACTIVITIES

Conference Reviewing

- N. 2 International Conference on Knowledge-Based and Intelligent Information & Engineering Systems (KES 2024)

Journal Reviewing

- N. 1 Journal of Computational Mathematics and Data Science, ISSN: 2772-4158

Gravina in Puglia (BA) – 10 Oct, 2024

Gaetano Settembre

In compliance with the GDPR and the Italian Legislative Decree no. 196 dated 30/06/2003, I hereby authorize you to use and process my personal details contained in this document.