Francesco Guarnaccia

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Citizenship: Italy
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Main Interests

Neuroimaging, Neuroscience, Life Science, Healthcare, Machine Learning, Deep Learning, Network Science, Data analysis.

Education

University of Padua — Padua, Italy

Bachelor Degree in Biomedical engineering — 2015 – 2019

University of Padua — Padua, Italy
Master Degree in ICT for Internet and Multimedia, — 2019 – 2022
"Life and Health" - Medical ICT curriculum
(full details @ https://mime.dei.unipd.it/areas-of-specialties/life-health)

Research experience

Internship — Milan, Italy
07/2021 – 12/2021

"Network Analysis" and "Graph Theory" application for brain aging structural connectivity @ Neuroimaging Research Unit, Division of Neuroscience San Raffaele Scientific Institute, Vita-Salute San Raffaele University.

Reference: Professor Federica Agosta (agosta.federica@hsr.it)

Research Training — Padua, Italy
01/2022 – 07/2022

"Network Analysis" and "Graph Theory" application for brain structural connectivity in glioma patients @ Department of Information Engineering, University of Padua.

Reference: Professor Alessandra Bertoldo (alessandra.bertoldo@unipd.it)

PhD Student Verona, Italy

10/2024 – Current

”Development of methods for multimodal quantitative magnetic resonance imaging for the investigation of pathological alterations in lesional and normal appearing tissue in patients affected by multiple sclerosis” @ Department of Engineering of Intelligent Systems, University of Verona.

References: Professor Massimiliano Calabrese (massimiliano.calabrese@univr.it) , Professor Francesca Benedetta Pizzini (francescabenedetta.pizzini@univr.it) , PostDoc Agnese Tamanti (agnese.tamanti@univr.it)

Job Experience

Consultant Turin, Italy

08/2022 – 02/2023

Consultant @ BlueReply, Digital Performance Monitoring business unit.
Observability data engineer.

In this role:

Utilization of the ”Dynatrace” platform, an enterprise tool for full-stack monitoring of digital infrastructure. Specifically, the use of this software was aimed at configuring automatic alerts to facilitate the analysis of possible issues, referring to each entity present from the backend to the frontend of the IT infrastructure, and at monitoring the user experience to improve the appreciation of the navigation of the reference application.

Consultant Milan, Italy

03/2023 – 04/2024

Consultant @ LaifeReply, Digital Healtcare business unit.
Clinical data analyst and scientist.

In this role:

-Clinical Data Platform (CDP): Within the Clinical Data Platform (CDP) project, I assumed hybrid roles encompassing both technical and analytical aspects. My responsibilities included searching and extracting data from the CDP, a clinical data storage project utilizing Google Cloud Platform services. Furthermore, I created dashboards to effectively visualize key performance indicators (KPIs) derived from selected and aggregated information within the CDP.

-Value Based Medicine (VBM): In collaboration with the Value-Based Medicine (VBM) team, I engaged in data analysis tasks related to both cloud storage platform migration, from Azure to Google Cloud, and clinical data processing, with the ultimate goal of enhancing the quality of life for patients undergoing oncological surgery. By integrating questionnaires that assess the impact of surgery on various aspects of daily life, VBM aims to utilize the collected data to develop Machine Learning predictive models and indicators for patient profiling and monitoring during post-operative follow-ups. This enables early detection of any potential post-surgery complications, allowing for timely intervention and improved patient outcomes.

-National Telemedicine Platform (NTP): As part of the National Telemedicine Platform (NTP) project, I played a key role in data science tasks. My primary focus was implementing exploratory analysis procedures, employing clustering models to uncover patterns and trends within the data. Additionally, I contributed to anomaly detection and predictive maintenance of medical devices. For anomaly detection, I implemented and evaluated unsupervised anomaly detection algorithms, along with feature engineering procedures. In the predictive maintenance use case, I handled model selection and assessment for regression problems.

-Personalized Medicine R&D unit: In this unit, I collaborate with a team of dedicated researchers to develop computer-aided diagnosis solutions using cutting-edge machine learning and deep learning frameworks. We analyze medical images using various techniques tailored to specific application areas, aiming to create software tools capable of classification and prediction tasks. These tools have the potential to revolutionize medical diagnosis by providing accurate and timely insights to clinicians, ultimately enhancing patient care and outcomes.

Skills

Programming

Proficient in: MATLAB, Python.
Familiar with: Bash, R.

Tools

Computational: Visual Studio, Google Colab, MATLAB, Jupyter Notebooks.
Neuroimaging Processing: FSL, FreeSurfer, SPM, SPSS, MRtrix3.

Languages

Italian (native language)
English productive skills (B2)

English writing (B2)

Soft Skills

Proficient in: Project Management, Team work.