

DAVIDE GAROFALO, SOFTWARE ENGINEER

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[Portfolio](#) | [Github](#) | [Linkedin](#)

PROFESSIONAL SUMMARY

A **software engineer** with 2+ years of experience in areas ranging from *scientific research* to *data science* and *web development*. An *independent and adaptive* professional who is passionate about *learning, trying, and diving deeply into new, unfamiliar technologies*. Blockchain, NFT and cryptocurrencies enthusiast and investor.

Areas of professional expertise:

- **Fast Learning and Adaptation**
- **Data Science and Analytics**
- **Cross-Functional Communication and Teamwork**
- **Full-Stack Development**
- **Project Management and Leadership**
- **Scientific and Engineering Documentation**

PROFESSIONAL SKILLS DEMONSTRATED

[HITACHI](#) INNOVATION

May 2021 – Present

Part of the publicly traded (HTHIY) multinational conglomerate that specializes in infrastructure, IT, AI and other cutting edge technologies with ~300,000 employees around the globe and ~\$85b annual revenues.

Software Engineer / Consultant

Designed, built and maintained five full-stack web-apps used for the predictive maintenance of the railway apparatuses. Tech stacks used: Java SpringBoot-AngularJS-MySQL, Django-MaterialUI-MongoDB and Django-React-PostgreSQL.

- **Full-Stack Development:** Successfully built and deployed on AWS with Docker multiple web applications that are currently being integrated by the company into a bigger framework. Designed and coded the Interactive dashboards. Created and exposed REST APIs. Scheduled daily tasks with Redis and Celery. Designed the data model and implemented the data pipeline for the ingestion of sensor data and the communication with the existing neural-networks. Post-processing of metrics and predictions data in order to expose the results to the end user via Highchart.js.

- **Fast Learning and Adaptation:** Managed to learn web development from scratch in a limited amount of time. Delivered full functioning applications, sometimes in a one-man team and a fully remote environment.

[TEORESIS.p.A.](#)

February 2021 – Present

An engineering and consulting firm specializing in innovative technologies with ~800 employees and clients like Hitachi and Stellantis (ex Fiat Chrysler Automobiles).

Python Developer / Consultant

Back-end Python developer working mainly on an in vivo theranostics (therapeutics and diagnostic) project in collaboration with the University of Benevento (IT). Consultant at Hitachi for the role described above

- **Cross-Functional Communication and Teamwork:** Collaborated with a team of 10 engineers with biomedical and automation backgrounds, applying the principles of the Agile Scrum Methodology. Tutored two graduating students in the realm of *fintech, blockchain and web3*. Served as a backup Scrum Master for small projects.
- **Python Programming:** Coding and functional testing. Design and implementation of the modules' interconnection and communication protocols via socket. Light spectra data manipulation and optimization.

[PORTSMOUTH UNIVERSITY](#)

March 2020 – September 2020

Award-winning university & top 30 in the UK for student satisfaction (NSS, 2020).

MSc Thesis Project Work

Predicting mortality in Intensive Care Units with Machine Learning models supervised by professor [J.Briggs](#).

- **Data Science and Analytics:** Executed a full Data Mining project with the Crisp-DM methodology. Extracted +400,000 rows of ICU patient's data from an open-source database (MIMIC-III) using SQL queries. Performed Exploratory Data Analysis (quantitative statistical analysis, visual exploration). Applied Data Cleaning and Handling techniques (dealing with outliers and missing data, data transformations data normalization, discretization of time series). Achieved a balanced accuracy of ~71% in predicting mortality of the ICU's patients by training and tuning Machine Learning models (balanced boosting and random forest)

- **Scientific and Engineering Documentation:** Wrote a literature review on vital signs monitoring and mortality prediction with AI. Wrote weekly reports to the professors who were supervising the project.

[UNIVERSITY OF SALERNO](#)

May 2019 – February 2020

The Fisciano campus of the Università degli studi di Salerno with ~35.000 full-time students.

Researcher

Performed original research on Lie Detection with the use of a portable Electroencephalogram Device by collecting and analyzing data from 39 subjects.

- **Project Management and Leadership:** Led a research team of 3 graduating students while studying for graduation myself. Successfully managed the communication of results with prof. [R.Tagliaferri](#) (Computational Intelligence) and prof. [F.Esposito](#) (Neuroscience and Medicine). Exposed the results of our study at the VII Congress of the National Group of Bioengineering (GNB) organized by the University Of Trieste (IT).
- **Data Science and Analytics:** Performed in depth literature search and review to be up to date with the state of the art. Designed the experiment and its administration to the subjects. Designed the preprocessing pipeline for reducing Signal to Noise Ratio. Testing and Tuning of Deep Learning models (DNN – CNN – GAN)
- **Scientific and Engineering Documentation:** Authored a peer-reviewed scientific paper summarizing the results of the analysis of the data that our team collected, showing new insights in the neurobiology of lying.

[METODA FINANCE](#)

October 2014 – January 2015

A consultant firm specializing in IT Financial services with ~200 employees and mostly Italian banks as clients.

Internship

Data re-modeling and re-design of a pre-existing SQL database leading to its migration to MongoDB. Optimization of queries used for credit risk estimation and anti-fraud. Configuration of a distributed sharding server.

EDUCATION

MSc in Information Systems. University of Portsmouth (Portsmouth, UK)

- Graduated with Distinction (GPA: 4/4)

MSc in Business Innovation & Informatics (AI/Big Data Analytics). University of Salerno (Salerno, IT)

- GPA: 4/4 | Summa cum Laude

BS in Computer Engineering. University of Salerno (Salerno, IT)

SOFTWARE DEVELOPMENT SKILLS AND TOOLS

Data Preprocessing: Python (Jupyter Notebooks - Numpy - Pandas - Matplotlib)

Statistical Analysis: Rstudio (tidyverse - dplyr - ggplot)

FullStack: Javascript, Django, Flask, Docker, React, AngularJS, Html, CSS, REST APIs and WebSockets

Machine Learning and Deep Learning: Scikit-Learn, Imbalanced-Learn, Keras (NN - CNN – GAN – AE), Time Series

Databases: PostgreSQL | MySQL | MongoDB | GoogleBigQuery

CERTIFICATES AND PUBLICATIONS

[Professional Scrum Master I](#). 09/2022

[Google Data Analytics Professional Certificate](#). 07/2021

[Google Project Management Professional Certificate](#). 07/2021

Publication: “[Detecting the neural processes of lie generation with a low-cost EEG: a preliminary study](#)” Patron(2020)
Garofalo et al. — Seventh National Congress of Bioengineering - Proceedings