Giuseppe Giorgio Colabufo

Mathematician, Data scientist

Contatti

Via Giovanni Maria Lavagna, 15

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LinkedIn profile

x^2 Math Skills

Mathematical modelling 3+ years

Operations Research 3+ years

Optimization 3+ years

IT Skills

Microsoft Excel 10+ years

Software development 6+ years

Data analysis 3+ years

Data science 1+ years

Machine learning 1+ years

Summary

Hi there!

To you reading to know about me, I could start by saying that I studied math, but it wouldn't be enough if I didn't remember the etymology of the term. In Latin, *studère* meant – even before "to study" – "to devote oneself, apply oneself", and also "to prefer", "to love"; and therefore *studium* is zeal, diligence, care and at the same time ardor, desire, passion. Well, I can say that I devoted myself to mathematics with passion.

After high school I enrolled in the Faculty of Mathematics of the University of Pisa. I was among those few lucky to have no doubts about the choice of university to undertake. From an early age I dabbled in logic problems, puzzles, and the questions of the Mathematics Olympiad. In my second year, I was selected to participate in a double degree course with the École Polytechnique in Paris, where I spent more than two very rich years from an academic and personal point of view.

I decided to have an experience abroad for several reasons: first of all curiosity. I like traveling and I think it's essential to know the university sector and the world of work even outside your own country. I really love the opportunity to experiment new paths and, moreover, cultural adventure attracts me despite the fact that it can present several unknown (after all, mathematics is full of them!). One of the advantages of having pursued a mixed path was precisely that of being able to appreciate the differences between cultures. This also leads to another passion of mine: languages. I really like these because they allow - just like mathematics - to communicate, discover, meet, explore.

For a couple of years I have been working on designing and implementing models that describe some aspects of reality, mostly related to engineering systems, which help to solve and optimize concrete problems. It all comes from understanding the problem; this will lead to choosing a model that will enhance the most important feature and finally the most effective resolution method (classic OR algorithms or Machine Learning and Deep Learning techniques).

Would you like to know more? Don't hesitate to contact me!

Work Experience

Data scientist — **01/2023 - today**

MBI s.r.l.
Pisa, Italy

Modelling and forecasting the energy market in Italy and Europe through the use of data analysis techniques and machine learning models.
Skills: Data analysis · Machine learning · Python · mathematical modeling

Mathematician — **09/2020 - 01/2023**

Softec Engineering
Leghorn, Italy

Development and implementation of mathematical models for optimization and automation in the design of industrial plants in the energy sector. Software development for customization and integration of programs and application.
Skills: Operations Research · Optimization · Microsoft Office · VB.NET

</> Programming languages

Python 5+ years

LaTeX 5+ years

VB.Net 2+ years

Languages

Italiano L1

Français C2

English C1

Deutsch A1

Language certificates

12/2018

TOEIC (980/990 level C1)
ETS

04/2017

TCF (niveau C2)
France Éducation international

10/2011

FCE (level B2)
University of Cambridge

Graduate Student Intern **04/2019 - 08/2019**
Department of Electrical and Electronical Engineering
University of Melbourne, VIC, Australia

Work on input-to-state-stability of Newton's Method and its variants. By applying the characterization via Lyapunov functions, we obtained results of practical convergence to a ball and stability in the sense *ISS*, *integral ISS* and *incremental ISS* within the framework of noisy input data or approximation errors.
Skills: Bibliographic research · Control theory

Internship **06/2018 - 08/2018**
ARMIS.TECH
Paris, France

Work on extracting information from a PDF catalogue of a commercial campaign. Results: development of a GUI in Python to automate data extraction and creation of a database.
Skills: Python · Data analysis · Microsoft Excel

Education

Cycle Ingénieur Polytechnicien **2016 - 2020**
École Polytechnique
Paris, France

Curriculum: applied mathematics. · GPA: 3.7/4.

Master's degree in Mathematics **2018 - 2020**
Università di Pisa
Pisa, Italy

Curriculum: applied mathematics. · Master Thesis: Approximation in SBV spaces. · Final grade: 110/110 cum laude.

Bachelor's degree in Mathematics **2014 - 2018**
Università di Pisa
Pisa, Italia

Curriculum: IT. · Bachelor Thesis: Il problema di Kadison-Singer. · Final grade: 110/110 cum laude.

Publications

[1] Giuseppe G. Colabufo, Peter M. Dower, and Iman Shames. Newton's method: sufficient conditions for practical and input-to-state stability. *IFAC-PapersOnLine*, 53 (2):6334–6339, 2020. ISSN 2405-8963. doi: https://doi.org/10.1016/j.ifacol.2020.12.1764. URL `https://www.sciencedirect.com/science/article/pii/S2405896320323727`. 21st IFAC World Congress.

Pisa, 19th May 2023 _____ Giuseppe Giorgio Colabufo