

Andrea Amico

Ph.D. in Physics

✉: amico.andrea.90@gmail.com | ☎: +39 3357449618 | In: [linkedin.com/in/andrea-amico-90/](https://www.linkedin.com/in/andrea-amico-90/)
website: <https://www.andreaamico.eu> | Github: <https://github.com/andreaamico>

“Problem-solving is what I enjoy the most. I have a scientific mindset and a great passion for programming. During my Ph.D. studies I published in several top scientific journals and I worked with world-leading scientists including the Nobel Laureate Professor Wolfgang Ketterle. I'm currently interested in data science, machine learning, and artificial intelligence.”

Data science experience

2022-present	<p>AI Research Engineer Spindos S.p.A.</p> <p>I work as an AI consultant and my role is to manage machine learning projects from the initial assessment to production and testing. Below is a list of companies I'm currently working with:</p> <ul style="list-style-type: none">○ Bridgestone: development of a distributed sensor network to real-time monitor the road condition around the world. Technologies: PySpark, Microsoft Databricks, MATLAB, SQL, Simulink, python data science ecosystem.○ Ferrari: assessment of AI-based improvement to speed up the malfunctions resolution process. Technologies: python data science ecosystem.○ Conad: development of the algorithm which triggers a shopping cart check to customers using the self-scan shopping method. Technologies: reinforcement learning, python data science ecosystem, A/B testing, monte Carlo simulations.○ Grunenthal: documentation clustering and efficacy analysis of adopted solutions. Technologies: NLP clustering, PyTorch, Hugging Face, transformers○ AEP: passenger counting in public transportation using onboard sensors. <p>Followed and managed 10+ interns</p>
2019-2022	<p>DATA SCIENTIST Plan Soft s.r.l.</p> <ul style="list-style-type: none">○ Application of reinforcement learning in the retail industry○ Proposals development for artificial intelligence projects○ Machine learning trainer for global companies○ NLP project - text classification and named entity recognition with transformers○ Computer vision - extract information from unstructured advertisement flyers○ Big data Spark project - road condition estimation around Europe <p>Companies I've been working with: Conad, Bridgestone, Menarini, Bureau Veritas, Thales, KME, Genio s.r.l.</p>
2015-2019	<p>Ph.D. Researcher in the ultracold atoms field LENS, INO-CNR</p> <ul style="list-style-type: none">○ Data analysis (EDA, modelling and fitting)○ Quantum simulation○ Monte Carlo simulation
2018-2019	<p>University tutor in Classical Mechanics and Quantum Physics</p>
2015-2018	<p>Python freelance programmer</p> <ul style="list-style-type: none">○ Development of a control program for infrared laser interferometry scanner (Structural Diagnosis in Art Conservation)
2015	<p>CNR-INO internship</p> <p>“Development of two-dimensional trapping potential for ultracold atoms”</p> <ul style="list-style-type: none">○ Data analysis○ Construction of a laser optical setup for holography atom trapping

Technical skills

<p>Skill Set:</p> <ul style="list-style-type: none"> ○ Data science end-to-end project management ○ Statistical Methods for Data Science ○ Data Collection & Processing ○ Algorithms Optimization & Evaluation ○ Machine Learning (classification & clustering) ○ Reinforcement learning ○ Data Mining ○ Numerical Analysis ○ Data Management ○ Data Visualisation ○ Simulations via Monte Carlo methods ○ Time series Forecasting ○ Anomaly detection ○ NLP ○ Computer vision ○ MLOps 	<p>Technologies:</p> <ul style="list-style-type: none"> ○ Scientific Python: Numpy, SciPy, Pandas, SciKitLearn. ○ Data Visualisation: Matplotlib, seaborn, Plotly. ○ Data management: SQL, NO SQL DB, JSON, YAML, XML, CSV. ○ Deep learning frameworks: TensorFlow, Keras, PyTorch, fastai. ○ Big Data: pySpark, Spark SQL ○ NLP frameworks: Huggingface, NLKT, SpaCy. ○ Cloud services: AWS, Azure, GCC. ○ Computer vision: OpenCV. ○ Graphics: Blender, Inkscape, GIMP and Photoshop, Unity, FreeCAD. ○ Office suite core (Word, Excel, PowerPoint) ○ Engineering software: OSLO, LabView. ○ Markup languages: HTML, LaTeX. ○ Other programming languages: C, C#, Wolfram Mathematica, MATLAB.
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Online certificates

2022	<ul style="list-style-type: none"> ○ GitLab - How to manage a remote team ○ Coursera Specialization - Generative Adversarial Networks (GANs)
2021	<ul style="list-style-type: none"> ○ Coursera Specialization - Practical Data Science Specialization
2020	<ul style="list-style-type: none"> ○ Coursera Specialization - Natural Language Processing ○ Coursera Specialisation - Reinforcement Learning ○ Coursera Specialization - Advanced Data Science with IBM ○ Duke University - Statistics with R Specialization
2018	<ul style="list-style-type: none"> ○ Coursera Specialization - Deep Learning ○ Udemy - Complete C# Unity Developer 2D
2016	<ul style="list-style-type: none"> ○ Coursera - Using Python to Access Web Data
2015	<ul style="list-style-type: none"> ○ MITx - 6.00.2x - Introduction to Computational Thinking And Data Science ○ MITx -6.00.1x - Introduction to Computer Science and Programming Using Python
2014	<ul style="list-style-type: none"> ○ Coursera - Introduction to programming for musicians and digital artists

Education

2019	Ph.D. student in Physics University of Florence LENS laboratories: European Laboratory for Non-Linear Spectroscopy
2015	2ND LEVEL – Master degree in Physics and Astrophysics 110/110 cum laude
2012	1ST LEVEL – Degree/bachelor in Physics and Astrophysics 110/110 cum laude

Volunteer Experience

2016-2018	F-LIGHT festival - Science Divulgation I attended several public events for scientific dissemination. I presented to the general public, mostly children from primary and secondary schools, the concept of color from a physical point of view: how the human eye perceives different photon wavelengths, and how the primary colors can be added and subtracted from each other to obtain the full spectra of visible colors.
2016-2017	ScienEstate I trained high school students to present to the public simple experiments about light that shows how photon energy is connected to the human perception of colors.

Personal projects

2018-present	Musical Ear (Beta) Educational mobile application to improve musical ear https://play.google.com/store/apps/details?id=com.codefive.musicArcade&gl=IT
2017-present	FitWrap Custom fitting package in python available on PIP / github https://www.andreaamico.eu/data-analysis/2018/03/03/fit_wrapper.html
2017-present	Code pills website: https://www.andreaamico.eu/ Collection of tips about machine learning and data analysis using python and jupyter

Languages

- Italian: native speaker
- English: fluent

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15/02/2023
Andrea Amico

