

Alessandro Canola Gavioli

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EDUCATION

MII - Master Insurance Innovation
Collegio Carlo Alberto, Turin

Sep 2024 - Expected July 2025

One-year master's program focused on data analysis applications in finance, including a 3-month internship with partner companies. Awarded a highly competitive, full scholarship.

Relevant coursework: Risk Management, Data Science, Insurance Products, Big Data AI & ML, IOT, ESG.

Master of Science - Physics of Complex System
University of Turin

Sep 2022 - July 2024

Thesis: 'Forecasting trend futures BTP with AI', with Intesa SanPaolo Bank. 110/110 summa cum Laude.

Relevant coursework: Machine Learning, Data Mining, Derivatives, Stochastic Processes, Econophysics, Multi-Agent System, Dynamic Systems, Non-Linear Waves and Turbulence, Quantum Computing.

Bachelor of Science - Physics
University of Pisa

Sep 2019 - Sep 2022

Thesis: 'Brownian motion and Path Integral'.

Relevant coursework: Laboratory 1 & 2 (Python programming), Informatics (C programming), Digital Technologies (MATLAB programming), Advanced Quantum Mechanics, Astrophysics, Linear Algebra.

EXPERIENCES

Research collaborator – Thesis Project in Intesa Sanpaolo Bank

Sep 2023 - July 2024

- Developed and implemented AI models to predict BTP futures prices.
- Analyzed time series data using Python, enhancing prediction accuracy.
- Collaborated with financial professionals to support development decisions through weekly meetings.

STEM teacher - GoStudent online educational platform

Sep 2022 - Jan 2024

- Provided academic support to students in physics, mathematics and linear algebra.
- Assisted students in understanding complex concepts and solving challenging problems.
- Developed customized lesson plans to improve students' comprehension and performance in key subjects.
- Strengthened problem-solving and critical thinking skills in students through practical exercises and theoretical discussions.

Private tutor for high school student

Jan 2019 - Sep 2022

- Provided one-on-one tutoring in mathematics, physics, and linear algebra, focusing on high school-level curriculum.
 - Tailored lessons to meet the individual learning styles and needs of each student, fostering a supportive environment.
 - Used a variety of teaching methods, such as visual aids and practice problems, to make difficult concepts more accessible.
 - Helped students improve exam strategies, study habits, and time management for better academic results.
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AWARDS

STEM Scholarship Collegio Carlo Alberto: value **22.000 €**.

First place National Philosophy Forum 2019 Liceo Francesco Redi.

PROJECTS

Artificial stock market

- Developed an artificial stock market simulation that replicates stock price movements using an agent-based model.
- Each agent class followed unique behavioral rules, allowing observation of profit outcomes across classes.
- Adjusting the proportion of each agent class revealed phase transitions in profitability dynamics.

Anomaly detection with AutoEncoder

- Implemented an AutoEncoder model to detect fraud in card transactions.
- Trained exclusively on non-fraudulent transactions, the model produces a higher reconstruction error when exposed to fraudulent transactions, signaling potential fraud.

Clustering for recommendation

- Applied clustering techniques to categorize customers into distinct classes, enabling targeted recommendations for personalized advertising and improving marketing effectiveness.
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ACTIVITIES

Sep 2017 - Oct 2018

Student President - Liceo Redi, Arezzo

- Worked closely with the principal and teachers, fostering effective communication.
- Led initiatives to enhance the school environment and student experience.

Sep 2017 - July 2018

Football Manager

- Organized and managed training sessions for young children, promoting teamwork.
- Strengthened leadership by motivating and guiding each child's growth in the sport.
- Maintained clear communication with children and parents, building trust.

July 2017

English Summer Course - St. Claire, Oxford

- Enhanced English skills through immersive classes and interactive workshops.
- Created a documentary on Oxford, developing teamwork and media abilities.
- Participated in a photography course, practicing techniques around Oxford.
- Engaged in cultural exchange with peers from Taiwan, China, Argentina, and Europe.

Sep 2016 - June 2019

Volunteering - Bicigrill

- Supported individuals with disabilities in waitstaff roles, ensuring order accuracy.
 - Provided guidance to foster confidence and independence.
 - Created an inclusive environment, enhancing the dining experience for all.
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SKILLS

Languages

- Italian: native.
- English: advanced level - C1.

Programming Languages

- Python (PyTorch, Pyro, pandas, scikit-learn, ...) | R | Matlab | C\C++ | SQL (basic)

Markup Languages

- LATEX | HTML (basic)

Other computer skills

- Operating systems: Windows, macOS.
- Microsoft Office.