Sebastiano Spinali

Doctor of Philosophy in Physics

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spinalisebastiano@gmail.com

Italian Citizenship

Social Network

Github Project Page Link

Languages

- Italian ● ● ● ● ●
- English ● ● ● ● ○

Hard Skills

- Python, C++, ROOT, LaTeX
- GIT, AWS, MATLAB, Processing
- OriginLab, Labview, CAD, Adobe Photoshop
- Keras, Numpy, Pandas, scikit-learn, matplotlib, UpRoot, Jupyter notebook, Anaconda, Tensorflow, PyTorch, Theano, Caffe

Soft Skills

- Teamwork ● ● ● ●
- Problem Solving ● ● ● ○
- Communication Skills ● ● ● ○
- Sociable and Proactive ● ● ● ●
- Active Listening ● ● ● ○
- Creativity ● ● ● ○
- Work under pressure ● ● ● ●

My natural tendency, when facing obstacles, is to consider and weigh all of the different possibilities and consequences. Therefore, I am passionate about analyzing big data as well as implementing data visualization, and addressing solutions. I am a cooperative person who gives his best in teamwork, strong in creating documents as well as communicating with other colleagues. I am capable of assessing a problem, executing the necessary actions, understanding the effect of a decision, and discovering innovative solutions.

Working Experience

Oct 2022 – June 2023 — **High School Teacher** — Emilio Greco Art School, Catania, Italy
Math and Physics teacher, school link: https://www.liceoartisticocatania.it/.

Nov 2021 – June 2022 — **High School Teacher** — Boggio Lera High School, Catania, Italy
Math and Physics Teacher, school link: https://www.liceoboggiolera.edu.it/.

Nov 2020 – Apr 2021 — **Placement Project** — Lancaster University

- Risk Controlled Trading analysis performed on Python using Machine Learning techniques and Statistical Arbitrage.
- The approach addresses algorithmic trading in StatArb using machine learning to maximize profit and manage risk. It involves three key steps: walk-forward strategy, ranking, and trading.
- Deeply Investigated Machine Learning tools: Linear Regression, Random Forest, Decision Tree, K-nearest Neighbors, Gradient Boosting.

Oct 2018 – Oct 2019 — **LTA Placement** — CERN, Meyrin, Switzerland

- Identification and Classification of different interaction vertices using several machine learning tools.
- Track reconstruction and recognition analysis performed with the ATLAS Official Code developed in both C++ and Python languages.
- Deeply Investigated Machine Learning tools: Tensorflow, Keras, sklearn, Random Forest, Pytorch.
- A strong Features Importances analysis performed.

Apr 2016 – Jul 2016 — **Researcher** — Università degli Studi di Catania

- Geometrical Acceptance check of the HRS spectrometers for APEX experiment.
- In collaboration with La Sapienza University and Jefferson Laboratory.

Education

Oct 2017 – Sept 2023 — **Ph.D. in Particle Physics** — Lancaster University
Measuring the CP-properties of the Higgs Boson in the Higgs to two τ analysis.

Sept 2011 – Nov 2015 — **Master of Science in Physics** — Università degli Studi di Catania
107/110 First Class Honours | Major: Nuclear and Particle Physics.

Sept 2005 – Mar 2011 — **Bachelor's Degree** — Università degli Studi di Catania
94/110 Upper Second Class Honours | Major: General Physics.

LISTA PUBBLICAZIONI SPINALI SEBASTIANO

- **Test of the GEM Front Tracker for the SBS Spectrometer at Jlab**
  https://www.sci-en-tech.com/ICCM2015/PDFs/1241-3973-1-PB.pdf

- **GEM tracker for high-luminosity experiments at the JLab Hall A**
  https://www.tandfonline.com/doi/abs/10.1080/10420150.2016.1263633

- **Dark matter search in a Beam-Dump eXperiment (BDX) at Jefferson Lab -- 2018 update to PR12-16-001**
  https://arxiv.org/abs/1910.03532

- **Near threshold J/ψ photoproduction and study of LHCb pentaquarks with CLAS12**
- https://www.jlab.org/exp_prog/proposals/17/E12-12-001A.pdf

- **Measuring the CP Properties of the Higgs Boson in Its Decay to τ Leptons with the ATLAS Detector**
  https://www.proquest.com/openview/49c709b8cf828788806c0f1765003e50/1?pq-origsite=gscholar&cbl=2026366&diss=y