Manuel Cattoni

Portfolio | Github | Linkedin
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Available full-time from Dec. 2026; 60% from end of Feb. 2027, alongside part-time Master

Professional Summary

Data Science and AI graduate (B.Sc., SUPSI) seeking a junior Data Scientist / ML Engineer role or an internship. Experience with multimodal sensor time series, leakage-controlled ML validation (nested leave-one-subject-out CV) and interactive data dashboards, plus independent web, mobile and applied-ML projects.

Education

SUPSI — Lugano, Switzerland
MSE in Data Science (part-time; Business and Biomedical Engineering electives) — *Starting Feb. 2027*

SUPSI — Lugano, Switzerland
B.Sc. in Data Science and Artificial Intelligence (Healthcare specialization) — *Sept. 2023 – Sept. 2026*

Alpadia Language School — Berlin, Germany
Intensive German course, level B1 (full-time) — *Sept. – Nov. 2026*

I.S.I.S. J.M. Keynes — Gazzada Schianno, Italy
High School Diploma in Computer Science — *Sept. 2018 – July 2023*

Experience

Thesis Researcher & Data Annotator — May 2026 – Sept. 2026
MeDiTech (SUPSI) in collaboration with EOC — *Lugano & Bellinzona, Switzerland*
- Analyzed 59 h of 100 Hz 9-DoF IMU data from sensorized toys (26 toddlers) to find autism (ASD) markers.
- Curated 4,800+ action intervals (36 motor classes); recovered undocumented sensor-to-toy mappings.
- Designed *Behavioural Timelines* (100 ms session grid): 0.78 balanced accuracy on Low/High ADOS-2 risk (nested LOSO CV).
- Action recognition (LightGBM, MiniRocket) 4× above chance on unseen children; window splits inflate F1 0.34→0.92.
- Built an offline, GDPR-compliant clinical dashboard (Dash, Plotly, Flask) syncing multi-angle video, sensors and labels.

Undergraduate Peer Tutor — Nov. 2024 – Sept. 2026
SUPSI — *Lugano, Switzerland*
- Tutored 3 students regularly for 2 years and about 10 occasionally (about 3 h/week) in math and computer science.

Delivery Driver & Cashier — Dec. 2023 – Feb. 2026
Storica Pizzeria della Stazione — *Malnate, Italy*
- Worked at least 3 evening shifts per week alongside full-time university studies.

IT Internships (High School) — Feb. 2021 – Nov. 2022
EasyCore, inVar, iMania — *Varese area, Italy*
- Configured on-premises servers, deployed IP surveillance cameras, maintained a company website (WordPress).

Selected Data Science Projects (Portfolio)

MotoGP Data Intelligence (Python, XGBoost, SQLite, Flask): Pipeline from official timing PDFs (45,509 laps, 23 circuits) to lap-time prediction at 3 checkpoints (XGBoost, SVR, MLP; MAE 0.41 / 0.31 / 0.11 s), with a public dashboard.

Stress Detection from Wrist Signals (Python, scikit-learn, SHAP): WESAD (15 subjects, 107 features), leave-one-subject-out CV: F1 0.84 / accuracy 0.91 for stress vs. non-stress; RFE, SHAP, noise-robustness tests.

CYP2C19 Inhibition Prediction (Python, RDKit, scikit-learn, XGBoost; team of 3): QSAR classifier on 12,665 molecules (scaffold split): test AUC 0.89 with SVM on descriptors + ECFP4 fingerprints; SHAP, applicability domain.

Technical Skills

Programming & ML: Python (NumPy, Pandas, scikit-learn, XGBoost, LightGBM, PyTorch), R, SQL, C/C++, C#
Tools: Docker, Git, Linux, Dash/Plotly, Flask, SLURM (HPC cluster), WordPress; personal projects: React, Next.js, Node.js, TypeScript, Flutter
Methodologies: Time-Series Analysis (Wavelets, Welch PSD, MiniRocket), Nested CV, SHAP, Deep Learning (LSTM, transfer learning); coursework: RL, GNNs, Bayesian Optimization, Anomaly Detection
Languages: Italian (native), English (B2), German (B1, intensive course)

References

Prof. Francesca Dalia Faraci, MeDiTech, SUPSI – thesis supervisor – francesca.faraci@supsi.ch