

LOÏC COYLE

Machine Learning Engineer | Data Engineer | Software Engineer

@ loic.coyle@hotmail.fr +33648092459 British, Irish, French 22/07/1995 loiccoyle.com loiccoyle in loiccoyle

ABOUT ME

Machine Learning Engineer with 5+ years of experience at CERN developing advanced ML solutions for complex systems. With expertise in full-stack development (Python/TypeScript/Rust), I excel at solving complex problems through data-driven strategies. Passionate about open-source and continuous learning, I thrive on tackling challenging problems and building innovative tools that bridge cutting-edge machine learning with robust software engineering.

WORK EXPERIENCE

Associate Researcher - Applied Machine Learning
European Organization for Nuclear Research (CERN)

2019 – 2024 Geneva, Switzerland

- Used Machine Learning techniques to model, improve the understanding of and minimize particle losses occurring in the Large Hadron Collider (LHC).
- Designed, trained and evaluated a number of Machine Learning models targeting various aspects of the LHC:
 - Multivariate time series surrogate modelling of the LHC’s instantaneous particle loss rate.
 - Anomaly detection models to identify and cluster LHC instabilities.
 - Machine Learning models for Unidentified Falling Object event detection.
- Developed purpose built, open-source, Python tooling to build ETL pipelines and visualisation.

Python Tensorflow PyTorch Pandas Spark Data Visualisation
Data Science Gaussian Processes Docker Scientific Communication
Kalman Filters Statistical Methods Generative Models

Master’s Research Project - Applied Machine Learning
European Organization for Nuclear Research (CERN)

Feb 2018 – March 2019 Geneva, Switzerland

- Developed surrogate models of the LHC instantaneous particle losses with the goal of optimizing LHC operations.
- Analysis of LHC experimental data to further the understanding of particle losses and develop models of the LHC using both statistical analysis and Machine Learning techniques.

Python Tensorflow XGBoost Numpy Pandas Matplotlib

Internship

UK Atomic Energy Authority - Culham Center for Fusion Energy

May 2017 – August 2017 Culham, UK

- Combined a variety of simulation software such as GEF, Talys and Geant4 using custom written python tooling to generate nuclear reaction datasets.

Python Nuclear Data Data Analysis Data Visualisation Geant4

PERSONAL PROJECTS

Ethergraph - Graph based crypto-forensics web platform (WIP)

TypeScript React Next.js Front-end dev. web3 CD PostgreSQL
ethergraph.vercel.app

TinyTicker - Raspberry Pi powered e-paper financial data ticker

Python Flask Linux CI/CD Front-end dev. Numpy TDD
loiccoyle/tinyticker loiccoyle.com/tinyticker

Phomo & Strandify - Rust/Wasm photo mosaic & string art web apps

Rust Wasm Front-end dev. TypeScript React Vite CI/CD
loiccoyle.com/phomo-rs loiccoyle.com/strandify

See my other open-source projects at loiccoyle

EDUCATION

Master’s in Reactor Physics and Nuclear Engineering

Grenoble Institute of Technology - Phelma

2015 – 2018 Grenoble, France

- Includes an ERASMUS student exchange with the Ecole Polytechnique Fédérale de Lausanne in Switzerland.

Bachelor’s in General Engineering

Grenoble Institute of Technology - Phelma

2015 – 2016 Grenoble, France

SOFTWARE SKILLS

Python Typescript Rust C/C++
Machine Learning Data Engineering
PyTorch TensorFlow CI/CD
Data Science Data Visualisation
Numpy Pandas Matplotlib SciPy
SQL DB Design React Qt git
Containers Linux Fullstack Dev.

SOFT SKILLS

Rigour Autonomy Result Oriented
Active Listening Analytical Thinking
Scientific Communication Team Spirit
Independent Continuous Improvement

LANGUAGES

English
French
German



INTERESTS

- DevOps, MLOps, Algorithmic art
- Chess, music, piano
- Snowboarding, cycling, hiking, climbing

REFERENCES

Available on request.