LOÏC COYLE

Machine Learning Engineer | Data Engineer | Software Engineer

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ABOUT ME

I am a Machine Learning Engineer with a passion for Software Engineering. I have gained extensive experience applying advanced machine learning techniques to complex systems, particularly the Large Hadron Collider at the European Organization for Nuclear Research (CERN). I am proficient in multiple programming languages, including Python, TypeScript, and Rust, and am highly experienced in both front-end and back-end development. As evidenced by my background in physics and engineering, I'm a rigorous, autonomous, analytical and result-oriented professional, I thrive on tackling challenging problems and developing innovative solutions utilising the latest software technologies and best practices. Alongside my professional work, I actively engage in personal software projects to refine my skills and learn new ones, demonstrating my commitment to continuous growth and staying at the forefront of technological advancements.

WORK EXPERIENCE

Associate Researcher - Applied Machine Learning

European Organization for Nuclear Research (CERN)

2019 – 2024 | Geneva, Switzerland

- Using Machine Learning techniques to model, minimise and improve the understanding of 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.
- Developed purpose built, open-source, python tooling to facilitate data fetching, processing and visualisation.

Python | TensorFlow | PyTorch | Pandas | Spark | Data Visualisation | Data Science | Gaussian Processes | Docker | Scientific Communication | Kalhman Filters | Statistical Methods | Generative Models

Master's Research Project - Applied Machine Learning

European Organization for Nuclear Research (CERN)

Feb 2018 – March 2019 | Geneva, Switzerland

- 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

REFERENCES

Available on request.