Pierre BELAMRI

Rxzh | Pierre Belamri |
pierre.belamri@protonmail.com | +33.7.50.93.49.49

Work Experience

PhD Student - CNRS & Mines Paris, Paris Jan 2024 - Present

– Machine learning for anomaly detection in nanoindentation to identify crystal elastoplasticity properties at the sub-grain level. Under the supervision of D. Ryckelynck and D. Texier.

Founder - VH Systems, Paris May 2024 - Present

– We develop and market AI-based SaaS products and provide software engineering consulting services.

– We are currently working with three Fortune 500 companies in Pharmaceutical Industry and Telecommunications for $80k ARR.

Machine Learning Consultant, University of Zurich, Zurich Apr 2024 - Jun 2025

– I provided consulting services for the training and inference of language models for political science researchers.

– I helped set up a multi-GPU distributed training environment and I provided advice on hyperparameter selection, training optimization, and data pre-processing.

ML Engineer - Consultys, Lausanne Mar 2023 - Nov 2023

– Implementations of several open-source LLMs on client cloud instances using Docker Containers for Front-End, Back-End, Serving App. The goal is to produce a multitask conversational agent for Research Scientists using several task-specific smaller language models

ML Intern - BI, Amazon, Berlin Mar 2022 - Jul 2022

– Training of a competitor-monitoring NLP model to split & classify competitors job offers.

– Deployment of the model on AWS using Infrastructure as Code (CDK). The Cloud architecture included a Docker image Builder, a notification service, and a full ETL Data pipeline. Resulted inference performed in a cost-efficient way on ARM processors.

NLP & OSINT Intern, Philip Morris International, Lausanne Sep 2021 - Feb 2022

– Automatic intelligence provision using AI-based scrapers and sentiment analyzers. I developed Selenium Bots on Tor Network that were able to automatically browse illicit trading platforms for tobacco contraband.

– Delivery of insights (Graph Networking, social media & Dark Web monitoring for Illicit Trade Prevention)

Summer Intern, Mazars, Paris Jun 2021 - Aug 2021

– Development of price prediction indicators on the level/volatility of cryptocurrencies with Deep Learning and Sentiment Analysis (NLP) algorithms on social media. Reached a 95% correlation metric between the public sentiment and a currency price.

– Estimation of the probability of default of companies based on their financial ratios from Bloomberg with Machine Learning techniques. Reached less than 0.34 MRE between predicted and actual probability of default.

Research Intern, CAOR Mines Paris, Paris Mar 2021 - Apr 2021

– Combination of Computer Vision and Deep Reinforcement Learning algorithms to define an end-to-end training pipeline for robot arm manipulation. RL environment designed with PyTorch on a CUDA architecture. Implementation and training of a single-shot CV model to provide inputs to the RL agent. We reached 98.3% success rate over less than 30k training epochs. Link to Preprint

Education

2019 - 2023 Master of Science & Executive Engineering at **Mines Paris - PSL**
IDSC Major (Digital Engineering of Complex Systems)

2017 - 2019 Classes préparatoires at **Lycée Marcel Sembat**

Skills

Data Science
- Supervised, Unsupervised, Reinforcement Learning, Deep Learning, Natural Language Processing, Computer Vision.
- Python toolkits (PyTorch, TF, ...).

Software Engineering
- Python, Docker, Javascript, SQL, ReactNative, AR/VR programming (Unity, C#).
- GPU & Parallel programming.

Extracurricular Achievements

Competitive Gaming
- Achieved a global rank of 14th in competitive Minecraft PvP, Kohi server (2016).
- Competed as a key member of VorHerr, recognized as the world's top-ranked PvP team.

Publications

Belamri, Pierre et al. (May 2021). "Towards a Sample Efficient Reinforcement Learning Pipeline for Vision Based Robotics". In: URL: https://arxiv.org/pdf/2105.09719.pdf.

Belamri, Pierre, Henry Proudhon, et al. (2025). "Quaternion-Based Vision-Transformer for Polycrystalline EBSD Scans Pre-Trained on Large-Scale Synthetic Data". In: *Materials & Design*, p. 114599.

Last updated: September 16, 2025