Edouard Lacroix

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All Experiences

Master Thesis, *EPFL* • *STMicroelectronics* (Italy) *2025*

An Agent-Based System Approach to Silicon Wafer Defect Map Classification Using ViT

- *Conducted a state-of-the-art literature review on agent system components (perception, cognition, memory, tools, communication, learning)*
- *Applied Vision Transformers (ViT) for defect map classification*

Student Organizations, *EPFL* • *UNIL* (Switzerland)

Co-Founder of La Miellerie (music production organization) *2023 – 2025*

- *Managed sponsorship, marketing, and event teams*
- *Organized concerts for audiences of 100+ attendees*

IT Officer of The Entrepreneur Club *2023*

- *Implemented process automation and maintained the organization's website*

Grape wine harvesting, *Domaine nuit-saint-georges* (France) *2 weeks | 2020*

Discovery internship, *Dassault Systemes* (France) *2 weeks | 2017*

- *Discovered 3D rendering & VR application*

All Projects

Reinforcement Learning Actor for Wind Turbine Blade Pitch Control, *EPFL* • *UNFoLD Lab*

- Developed a simulated environment and trained an actor–critic agent for optimal blade pitch control

Interactive World Map of Spotify Charts

- Built an interactive world map visualization of global Spotify charts by country, genre, and artist, including a timeline of trends

Multi-Factor Equity Portfolio Strategy

- Designed a portfolio integrating multiple factors to enhance risk-adjusted returns

Benchmarking Recent Optimizers on LLMs

- Benchmarked SignSGD, Lion, Sophia and Adam on GPT-2; compared convergence, stability, and final perplexity across seeds and hyperparameter settings.

Point Cloud Dataset Generation, and benchmarked compression algorithms, *EPFL* • *MMSPG Lab*

- Generated synthetic point-cloud datasets and benchmarked several compression algorithms for performance and reconstruction quality.

LLMs DPO & Quantization

- Fine-tuned google/flan-t5-large with Direct Preference Optimization (DPO) and applied post-training quantization to reduce inference cost while preserving performance.

Vocabulary & Translation Android App

- Kotlin app built in Android Studio featuring spaced-repetition exercises, translation practice, and customizable vocabulary lists for language learning.

Oil Futures Pricing & Storage Modeling

- Developed numerical models to price oil futures and storage options, implementing simulation and optimization routines for valuation under different market scenarios.

Java Distributed Systems Simulator

- Implemented reliable messaging, proposal / ACK / NACK protocols, and lattice-agreement experiments; supports configuration-driven runs and reproducible testing for distributed-algorithm research.