Unai Sainz de la Maza Gamboa

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Education

University of Basque Country UPV/EHU 2023 – Present
PhD Student in Compilers *Donostia, Spain*

University of Basque Country UPV/EHU 2022 – 2023
Master's Degree in Computational Engineering and Intelligent Systems *Donostia, Spain*

University of Basque Country UPV/EHU 2017 – 2022
Bachelor's Degree in Informatics Engineering *Donostia, Spain*

Experience

PhD Student in Compilers Feb. 2025 – Present
University of Basque Country UPV/EHU *Donostia, Spain*

Technical Assistant Jun. 2023 – Jan. 2025
Donostia International Physics Center and University of the Basque Country *Donostia, Spain*

Machine Learning Engineer Jun. 2022 – May. 2023
Multiverse Computing *Donostia, Spain*

- Implemented a computer vision deep learning solution for defect detection problem. Worked on tensorizing classical deep learning solutions using Tensor Decompositions, e.g., CP, Tucker and Tensor-Train decompositions.
- Worked on predictive maintenance problem with multi-instance learning (MIL) and quantum-based ensemble machine learning methods.

Machine Learning Engineer Intern (*Research Team*) Feb. 2022 – Jun. 2022
Multiverse Computing *Donostia, Spain*

- Researched gate-based quantum extreme learning machine algorithm applied to classifications tasks.

Achievements

Patent registered in the European and United States Patent and Trademark Office
Multiverse Computing *2024*

- US20240095586A1

Bachelor's thesis with honors Quantum Extreme Learning Machine for Classification Tasks
University of Basque Country UPV/EHU *2022*

Publications

Boosting Defect Detection in Manufacturing using Tensor Convolutional Neural Networks
arXiv:2401.01373 *2023*

Specialized Skills

Programming Languages: Python, C, C++, Rust.
High Performance Computing: CUDA, OpenMP, MPI, Slurm.
Technologies: Linux, MLIR, LLVM, Pytorch, Docker, AWS.

Languages

Spanish & Basque – Native.
English – Fluent.