CLÉMENT PALÉZIS

SOFTWARE ENGINEER
BACKEND GENERALIST

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WORK EXPERIENCE

R&D ENGINEER
Denergium | November 2024 - Now

Production:
- Data insights (from cluster-level down to processing-unit-level)
- Backend / API upgrade and maintenance
- Frontend design and implementation

Research:
- Data analysis, feature extraction and anonymization
- Energy benchmarking and feature extraction for different types of applications: LLM fine-tuning, numerical simulation
- Design and implementation for time-series analysis pipeline: preprocessing, feature extraction, clustering, classification, validation

SOFTWARE ENGINEER
Scalian DS | September 2022 - November 2024
Consultant for ThermoFisher Scientific as a R&D engineer for cryo-electron tomography workflow

- SotA Template Matching library implementation:
  - Fast TM: classical approach, GPU computation
  - TTM: innovative tensorial approach
- Academic collaboration (Universidad de Murcia, Max Planck Institute)

SOFTWARE ENGINEER (INTERN)
CEA | March 2022 - August 2022
Development around programming models for heterogeneous architectures in a simulation code

- Software engineering
- Numerical Simulation & Data Visualization
- Parallel/Task programming
- Heterogeneous Cluster Computing

SKILLS

SYSTEMS & LOW-LEVEL PROGRAMMING
- **C, C++, Bash**
- Builds systems: **CMake, Make**
- Parallel programming: **OpenMP, MPI**
- SIMD and GPU programming: **AVX512, CUDA**

APPLICATION PROGRAMMING
- Backend: **Docker**, **Python, Flask**
- Frontend: **Streamlit, HTML, CSS, JavaScript**

DATA SCIENCE & MACHINE LEARNING
- Data processing: **Pandas, Polars, Numpy, Scipy**
- Machine learning: **Scikit-Learn**
- Deep learning: **PyTorch, HuggingFace**

EDUCATION

MASTER'S DEGREE - COMPUTER SCIENCE
ENSEIRB-MATMECA | 2021 - 2022
High Performance Computing and Data Science

- Architectures, languages and programming models
- HPC, categorization and learning algorithmics
- Execution, extraction and visualisation environments
- Application modules

HPC programming project
Creation of BLAS routines (GEMM and GETRF). Performance optimizations through compilation, computational techniques, SIMDisation, shared-memory and distributed-memory parallelism - **C/C++**, **AVX2** + **OpenMP/MPI**

MASTER'S DEGREE - COMPUTER SCIENCE
Université de Bordeaux | 2020 - 2021
Networks & **Parallel architectures programming**