

Ethan PUYAUBREAU

C++ / HPC Engineer
EDF R&D • ORNL • Available Jan. 2027

CONTACT

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🐙 github.com/DaKerboul

TECHNICAL SKILLS

Scientific Computing & HPC

C++17/20 · CUDA · Kokkos · MPI · OpenMP
Python · CMake · Performance Profiling

Platform & Infrastructure

Kubernetes · Docker · Proxmox VE
pfSense · Ansible · Bash · Linux

CI/CD & DevOps

GitLab CI/CD · Jenkins · Debian Pkg · Git

Data & Backend

PostgreSQL · MySQL · JSON/XML/XSD · Java

Docs

TeX · Typst

LANGUAGES

French Native

English C1 – TOEIC 970/990

Spanish B1

CERTIFICATIONS

TOEIC C1 – 970/990

ETS · October 2025

INTERESTS

Flight Simulation (DCS World, KSP, VR)
3D & VFX (Blender, DaVinci Resolve)
Music (Guitar, FL Studio)
Homelab · Self-hosting

PROFILE

C++ and HPC software engineer with 3 years of industrial R&D experience at EDF Lab Paris-Saclay and a research fellowship at Oak Ridge National Laboratory. Built two internal C++ performance analysis tools for a 500k-LOC nuclear simulation codebase. At ORNL, developed GPU energy measurement tooling for the Kokkos framework, presented at SMC 2025. Operate a self-hosted multi-node infrastructure (Proxmox, Kubernetes, Docker, pfSense) for 5+ years. Available for full-time positions near Paris from January 2027.

WORK EXPERIENCE

Software Architecture & Scientific Computing Engineer

EDF Lab Paris-Saclay · Palaiseau, France

Sept. 2023 – Sept. 2026

Designed and developed two internal C++ performance analysis tools for COCAGNE, a large-scale nuclear reactor core simulation platform (30+ engineers): a memory profiling library using LD_PRELOAD-based syscall interception, and a hierarchical CPU timing tool with Python bindings via PyBind11. Benchmarked ~2,400 test profiles comparing two major platform versions. Contributed to refactoring of neutronic solvers (Ports and Components model). Built Debian packaging pipelines with GitLab CI/CD and Jenkins.

C++17 · CUDA · Python · PyBind11 · CMake · PostgreSQL · GitLab CI/CD · Jenkins · Linux

Graduate Research Fellow – GRO Program

Oak Ridge National Laboratory · Oak Ridge, TN, USA

June – Aug. 2025

Developed software-based GPU energy measurement tools integrated into the Kokkos C++ performance portability framework, targeting Nvidia GPUs on production HPC clusters. Presented at the Smoky Mountains Conference (SMC 2025), Chattanooga.

C++17 · Kokkos · CUDA · MPI · Python · HPC

Software Engineering Intern

EDF Lab Paris-Saclay · Palaiseau, France

Apr. – June 2022

Developed fault trees and bow-tie models in Python for nuclear power plant risk analysis. Implemented a functional prototype for internal use.

Python · Risk Analysis

EDUCATION

Master of Engineering (M.Eng.) – Computer Science & Applied Math

Polytech Paris-Saclay · Université Paris-Saclay, France

Sept. 2023 – Sept. 2026

CTI-accredited (French national engineering accreditation), equivalent to a Bologna-process M.Eng./M.Sc. Scientific computing · HPC · Parallel programming · Software architecture · Networks & security · ML.

Bachelor of Science (B.S.) – Sciences and Technology

Institut Villebon Georges Charpak · Orsay, France

Sept. 2019 – June 2023

PROJECTS

Self-Hosted Infrastructure (Homelab)

github.com/DaKerboul

June 2020 – Present

Multi-node self-hosted infrastructure for 5+ years: Proxmox VE, Kubernetes, Docker, pfSense, VLAN segmentation, distributed storage, monitoring, full GitLab CI/CD pipeline.

Proxmox VE · Kubernetes · Docker · pfSense · Ansible · GitLab CI/CD

Commus DCS FR – French DCS World Community Directory

June 2024 – Present

Web platform centralizing 50+ French-speaking DCS World communities with live activity tracking, public API and RSS feeds.

Web Dev · REST API · Community