Louis PEYRONDET

FINAL YEAR CS MASTERS SPECIALIZED IN HPC

Actively seeking a 6-month or 4-month Software Engineering internship available from early February through late September

Bordeaux, France | louis.peyrondet@hotmail.fr | My Portfolio : porococo.github.io | github.com/PoroCoco
linkedin.com/in/louis-peyrondet

Education

ENSEIRB-MATMECA, Bordeaux Graduate School of Engineering, France, 2022 – 2025
5-year Engineering Degree in Computer Science, Specialization in HPC

- **Coursework:** OS, Computer Architecture, Parallel Algorithms and Languages, System Programming, GPUs, AI, OOP, Compilers, Distributed Systems, Numerical Linear Algebra

Keio University, Tokyo, Japan, Computer Science, Semester abroad Spring 2024

- **Coursework:** Visualization, Computer Vision, Virtual Machines, Databases, Networking

Experience

Research Intern, INRIA | *C, MPI, Parallel File Systems, Scheduling* June 2023 – Aug 2023

- Designed and implemented in C a decentralized version of an I/O scheduler for Parallel File Systems
- Engineered a way to allow parallel service, removing a linear scaling in the I/O scheduling
- Presented previous work at the French Conference in Parallelism, Architecture and System (Compas) Annecy July 2023

Research Intern, INRIA | *C++, MPI, MPI-IO, Parallel File Systems, OpenMP* June 2022 – Aug 2022

- Worked on studying and improving I/O performances of a finite element simulation HPC library
- Improved I/O times by 90% using MPI-IO
- Published and presented a paper in an international conference : SBAC-PADW Bordeaux Nov. 2022

Publications

I/O performance of multiscale finite element simulations on HPC environments Nov 2022
10.1109/SBAC-PADW56527.2022.00012

Projects

Dense Linear Algebra Library | *C, OpenMP, SIMD, MPI, CUDA, OpenACC* 2024

- Solver for dense matrix-matrix products (GEMM) and LU factorizations (GETRF)
- Optimized at every levels, including vectorization, shared-memory, distributed-memory, and GPU acceleration

Voxel Game Engine | *C, OpenGL, Pthread, CMake* 2023

- Leveraged multi-threading and optimizations to render Billions of interactive voxels in real time
- Built from scratch using C and OpenGL

Operating System for RISC-V Processors | *C, Assembly, OS* 2024

- Independently taught OS concepts to three undergraduates through the team development of an operating system from the ground up in C
- Features virtual memory, process management, system call and exceptions, basic I/O, user space programs

Skills

Programming Languages:

C, Python, C++, Lua, Assembly (x86/Risc-v), OCaml, Java, JavaScript, Bash

Tools:

Git, CMake, OpenMP, CUDA, pthread, MPI, OpenGL, Vulkan, Unity, OpenCV, Numpy, Matplotlib, LaTeX, Slurm, Hadoop, Spark, Linux, VSCode

Languages:

- French: Native
- English: C1 IELTS Certified
- Japanese: Elementary
- Spanish: Elementary