Louis Peyrondet

ENGINEERING STUDENT IN COMPUTER SCIENCE

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Final year CS Engineering student specialized in HPC. Actively seeking a 6-month or 4-month Software Engineering internship available from early February through late September.

Education

ENSEIRB-MATMECA, Bordeaux Graduate School of Engineering, France,   2022 – 2025
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 Algorithms

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

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

University of Bordeaux, France, Computer Science   2020 – 2022

- **Ranked first** among all students in the Computer Science department
- **Coursework:** Data Structures and Algorithms, Networking, Probabilities, Functional Programming

Experience

Research Intern, INRIA (French Institute for Research in Computer Science)   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 (French Institute for Research in Computer Science)   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
Francieli Boito, ***Louis Peyrondet***, Antonio Tadeu A. Gomes, Luan Teylo
10.1109/SBAC-PADW56527.2022.00012

Projects

Voxel Game Engine   2024

- Renders in real time at over 120 fps more than 4 Billion voxels by leveraging multi-threading and optimizations
- Built from scratch using C and OpenGL

Operating System for RISC-V Processors   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:	Tools:	Languages:
C, Python, C++, Lua, Assembly (x86/Risc-v), OCaml, Java, JavaScript, Bash	Git, CMake, OpenMP, CUDA, pthread, MPI, OpenGL, Vulkan, Unity, OpenCV, Numpy, Matplotlib, LaTeX, Slurm, Hadoop, Spark, Linux, VSCode	• French: Native • English: C1 IELTS Certified • Japanese: Elementary • Spanish: Elementary