



Department: R&D
Location: Nantes
Education: PhD.
Contract: Permanent contract / CDI
Experience: min. 3 years
Starting: ASAP
www.nextflow-software.com

HPC Software Engineer (C++)

Subsidiary of Siemens Digital Industry Software, Nextflow Software, is a Software Vendor headquartered in Nantes, France. Nextflow develops and sells advanced Computer-Aided Engineering (CAE) software in the field of Computational Fluid Dynamics (CFD)

Nextflow Software addresses engineering companies developing and manufacturing products/systems and equipment involving fluid flows, potentially with complex geometries and interactions with solids (e.g. moving parts, deformations), in the field of automotive, aerospace, marine, and many other industries.

Thanks to its talented team of researchers and engineers, and based on more than 10 years of close partnership with leading academic research laboratories from Ecole Centrale Nantes (ECN) and other universities, Nextflow Software is pushing the limits of hydrodynamics simulation.

Context

We develop scientific cross-platform software using graphical user interfaces, 2D/3D modeling and rendering technologies, and high-performance solvers processed on supercomputers.

In the context of its ambitious growth plan, Nextflow Software is hiring an HPC Software Engineer in order to minimize computation time, a determining criterion of Computational Fluid Dynamics.

Your Role & Responsibilities

Within Nextflow's Solver team, you will guarantee and improve performance of massively parallel Computational Fluid Dynamics (CFD) solvers. You will also maintain and develop a new HPC solver framework for non-developer scientists.

In this context, you will:

- Manage new and existing benchmarks on workstations and supercomputers (with or without GPU)
- Break down benchmark results, review code and write optimizations
- Collaborate to development kits and solver design to enable seamless and steady performance along time
- Organize dialog with CFD R&D engineer
- Contribute to technical roadmaps and ensure technological watch in High Performance Computing (HPC) publications and in new libraries or compilers

Your Profile

You are a C++ developer and you are highly motivated in modern C++ development and HPC.

Innovative and pragmatic with good communication skills, you are a solution-oriented person.

You have at least 3 years of experience in HPC.

Autonomous, innovative and pragmatic with good communication skills, you are a solution-oriented person.

You are familiar with :

- MPI communication protocol for parallel computing
- Cluster environment: Slurm, PBS, ssh scripting
- Performance profiling: Intel VTune/Advisor, Valgrind suite, Paraver, Vampir, Extrae, Score-P or others HPC analysis tools
- Multithreading: OpenMP
- SIMD vectorization and CPU architectures
- C++ compilers : GCC, MSVC, nvcc
- GPGPU: CUDA
- Unit tests
- Version control systems (Git)

Good level of English.

Please apply online at www.nextflow-software.com or by email : emploi@nextflow-software.com