Akli Hamitouche

Master in HPC

Searching for an internship in HPC, parallelism and/or optimization

CONTACT

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https://m4ssi.github.io

COMPETENCES

PROGRAMMING LANGUAGES
- C, Go, Fortran
- C++, Python, Java
- Assembleur (x86, sse, avx, fma)

PARALLELISM
- MPI, OpenMP, PTHREAD
- nvidia CUDA, OpenACC, OpenCl

DEVELOPMENT TOOLS
- Cmake, GNU Make
- Git, Gitlab

VISUALIZATION TOOLS
- ParaView
- Gnuplot, Matplotlib

APPLIED MATHEMATICS
- Iterative and direct methods
- Finite element method
- Finite difference method
- Differential calculus
- Computer simulation
- Linear algebra
- Probabilities

DATA AND LEARNING
- Approximate bayesian computation
- Linear and logistic regression
- Classification
- Decisional tree
- Sklearn (Python)

ENVIRONNEMENTS
- UNIX (GNU Linux)
- SLURM
- Docker
- Kubernetes

LANGUAGES
- French C2
- English C1
- Spanish B2

INTERESTS

PROFESSIONAL
- Research & Development
- Software development
- Performance gain and evaluation
- Teaching

PERSONAL
- Guitar, Piano
- Gerdening, Bonsaï
- Hikes

EXPERIENCE

Bodyguard at middle school
2019-2020

Collège Denis Diderot - Massy

- Administrative help
- Homework help
- Proctoring
- Education missions

Handler/ Seller
2018 – 2019

Eric Pillon Enchères – Versailles

- Art work inventory
- Spatial optimization
- Auction room preparation
- Work art presentation
- Inform clients
- Support during auctions

DIPLOMAS

Master's degree – High Performing Computing and Simulation
2020 - 2022

Université Paris-Saclay

- Efficience of High Performing architectures for simulation and massive data
- Modeling and simulation of physical phenomenon
- Software conception and production for high performing simulation
- Performance evaluation of HPC softwares
- Performance optimization and parallelization of HPC softwares
- Solving massive problems with distributed and parallelised algorithms

Bachelor's degree – Computing science
2015 - 2020

Université de Versailles Saint-Quentin

- Generalist degree in computer science addressing the fundamental notions of algorithms, procedural and object-oriented programming, language theory, compilation, cryptology and project construction and management.

WORKS

Simulation of 1000 homogeneous particles
- Using of Lennard-Jones potential
- System's internal energy and forces computation
- Visualization of particles evolution

C/C++, Polaris

Image processing in CUDA
- Matrix calculation to apply image filters
- GPU's full potential utilization
- Updating code for multi-GPU environment

C/C++, CUDA, FreeImage

Writing optimization passes with LLVM
- Code Instrumentation
- Insertion of RDTSC probe in innermost loops
- Calculation of the number of paths in a Controlflow-graph
- Calculation of the I/O rate in a program

C++, LLVM

Use and critical analysis of MAQAO reports in mini-apps optimization
- MAQAO performance analysis program discovery
- Optimization proces conception, validation
- Critical look on optimization efforts and speedups
- Tool report writing

GCC, ICC, MAQAO, GNU perf, oneAPI

COMMITMENTS

Elected student
2018 – 2020

Université de Versailles Saint-Quentin

- Voting and debates within the campus comity
- Voting and debates within the Education and University life Commission (fr : Commission à la Formation et a la Vie Universitaire)