Serge Guelton

R&D engineer

B *serge.guelton@telecom-bretagne.eu*
serge.liyun.free.fr/serge
⊕ *serge-sans-paille*

PhD

title	*Building Source-to-Source Compilers for Heterogeneous Targets*
supervisors	François Irigoin(Mines ParisTech/CRI) and Ronan Keryell (Télécom Bretagne/Silkan)
description	Given the fast evolution of hardware, compilers can harldy keep up. This PhD proposes a solution based on a scriptable compiler infrastructure combined with high-level code transformations.

Education

2002–2006 **French** Grande École d'Ingénieur**,** ≃ **Master Degree**, *Télécom Bretagne*.
specialized in software engineering & networks

Experience

Vocational

since nov. 2018	**Senior Engineer**, *RedHat*, Telecommuting. Maintaining, fixing and improving LLVM.	*LLVM, C++, Packaging*
2013–2018	**R&D Engineer**, *QuarksLab*, Telecommuting. R&D in compilation for security: building an LLVM-based obfuscator.	*LLVM, C++, Obfuscation*
2012–2013	**Chief HPC Engineer**, *Quiet-Oceans*, Plouzané. R&D in parallel computing: building an ocean noise simulator.	*C++, Python, OpenMP, MPI*
2011–2012	**R&D Engineer**, *HPC Project*, Telecommuting. Extension and stabilization of the Par4All auto-parallelizing compiler.	*C, OpenMP, CUDA, OpenCL*
2008	**R&D Engineer**, *INRIA/PARIS*, Rennes. Automatic certification of distributed computations within the KAAPI middleware.	*C++, Java, JNI*
2006–2007	**R&D Engineer**, *INRIA/MOAIS*, Grenoble. Extensions and applications of the KAAPI middleware for distributed and parallel computing.	*C++*

Open Source Activity

2020–∞	**Scientific Python Stack**, *Numpy, SciPy, scikit-image*. Codebase modernization and kernel optimisation.
2020–∞	**xsimd**, *https://xsimd.readthedocs.io*. Portable SIMD instruction abstraction.
2019–∞	**Fedora**, *https://src.fedoraproject.org/user/sergesanspaille*. Packaging the LLVM toolchain and a few other projects.
2017–∞	**LLVM**, *https://llvm.org/*. Various bug fixes and code enhancements.
2017–∞	**Frozen**, *https://github.com/serge-sans-paille/frozen*. C++14 library providing optimized frozen version for some standard STL containers and algorithms.
2016–∞	**Gast**, *https://github.com/serge-sans-paille/gast*. Cross-version Python AST abstraction.
2012–∞	**Pythran**, *http://pythran.readthedocs.io/*. Compiler of a DSL embedded in Python for scientific computing

Computer skills

Compilation	Obfuscation, Vectorization, Parallelism
Parallellism	Distributed/Shared memory, SIMD
Scientific Computing	Legacy codes optimization and parallelization
Packaging and Build System	Legacy codes optimization and parallelization
Daily used Tools/Lang	C, C++, Python, git, GNU tools, TDD, valgrind

Languages

French	native	English	Cambridge Advanced Certificate
German	Goethe Institut Zertifikat Deutsch	Russian	rusty

Publications

Articles, talks and blog entries on compilation, scientific computing or obfuscation.

RedHat	https://developers.redhat.com/author/serge-guelton
MiscMag	https://connect.ed-diamond.com/auteur/guelton-serge (in french)
QuarksLab	https://blog.quarkslab.com/author/serge-guelton.html
Talks	http://serge-sans-paille.github.io/talks/
Papers	http://serge.liyun.free.fr/serge/publications.html

Interests

TaeKwonDo	Practicing and teaching – 2nd dan
Storytelling	Mostly Nordic, Slavic and Breton tales
Woodcrafting	From chopping trees to building furnitures ;-)