

# Sergi Siso

Room 15, 39-41,  
Wilson Patten St,  
Warrington,  
(WA1 1PG)

07784 052 520

sergiesg@gmail.com  
<http://sergisiso.github.io/>

## EXPERIENCE

### Application Performance Engineer at Science and Technology Facilities Council

Daresbury, United Kingdom — 2015 - current

I analyse the performance of technical and scientific applications in order to adapt them to newer hardware architectures and reduce their total runtime. I am part of the Intel Parallel Computing Centre which specializes in the novel Intel many-core architecture, Intel Xeon Phi. Among the applications I have been optimizing there are:

- DI\_MESO LBE: A Lattice Boltzmann mesoscopic simulation package.
- DualSPHysics: A smooth particle hydrodynamics to study free-surface flow phenomena.
- An industrial Finite Elements solver for both inviscid and viscous compressible flows.
- In-situ visualization workflows with OSPRay technology.

Results of the mentioned work have been presented in international conferences.

### Resident Student Researcher at Performance Tools Department, Barcelona Supercomputing Centre

Barcelona, Spain — 2013

Developed and implemented a software to process summarized profiling information from highly scalable applications and format such information in a way that the Dimemas software is able to simulate its performance in different systems. It was part of the CEPBA-tools toolchain.

### Programmer at SERIMAG MEDIA SL

Barcelona, Spain — 2012 - 2013

Developed and implemented a Python document classifier for a banking application. It uses data mining technologies such as Support Vector Machines and the Viterbi algorithm.

### Grant-holder as a cryptography researcher at Department of Cryptography and Graphs, University of Lleida

Lleida, Spain — 2010-2011

Developed and implemented an electronic voting system which works on different types of homomorphic cryptosystems, specifically over elliptic curves. Studied and implemented other cryptography topics.

### Programmer at Montajes Eléctricos Portolés S.A, Fraga

Fraga, Spain — 2010

Programmed Programmable Logic Controllers for many applications (solar panels, refrigeration rooms, hydraulic pumps,...) and developed web interfaces to control them remotely.

## EDUCATION

### **Master of Science with Distinction in *High Performance Computing*, EPCC, University of Edinburgh**

Edinburgh, United Kingdom — 2013 - 2014

- Scholarship: "Highly Skilled Workforce" award of the Scottish Funding Council.
- Dissertation: "Parallelisation of the Coupled Coherent States quantum dynamics simulation" | Advisor: Andrew Turner

### **Master's Degree in *Information Technology*, Polytechnic University of Catalonia**

Barcelona, Spain — 2011 - 2013

- Thesis: "Simulating parallel systems using summarized application information" | Advisor: Jesus Labarta

### **Bachelor Degree with Honours in *Enginyeria Tecnica en Informatica de Sistemes* (Computer engineering), University of Lleida**

LLeida, Spain — 2008 - 2011

- Thesis: "Electronic voting system over elliptic curve cryptography" | Advisor: J.M Miret

## LANGUAGES

- Catalan: Native
- Spanish: Native
- English: Fluent (IELTS and Cambridge exams)

## COMPUTER SKILLS

- Languages: C, C++, Fortran, Java, Bash, Python, ...
- Platforms: Unix, HPC environments
- Parallel APIs: MPI, OpenMP, CUDA, PGAs, SHMEM
- Requirements analysis and design with patterns of an Information System.
- Design and implementation of Data Mining algorithms with NN and SVM.
- Advanced design and analysis of serial/parallel algorithms.
- Deep knowledge about OS's structure and compilers internals.
- Design, implementation and optimization of high performance parallel applications using different programming models and architectures.

## AWARDS

- Nov. 2014 - MSc awarded with distinction. University of Edinburgh.
- July 2013 - Highly Skilled Workforce Scholarship. Scottish Funding Council.
- Oct. 2011 - Bachelor awarded with honours. University of Lleida
- April 2010 - University of Lleida Robocode Contest 2010. First Place in 1 vs 1 category.
- July 2008 - Informatics Contest of Lleida. Second Place in under 18 category.
- July 2006 - Cangur SCM (Tests from the Mathematical Society of Catalonia). Level 2, place 47 from 5260.

## VOLUNTEER WORK

- June 2014 - Student Volunteer at International Supercomputing Conference 14