

Cristián RAMÓN-CORTÉS VILARRODONA

Industrial Engineer | Computer Sciences Engineer



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I am a PhD Student for the Computer Architecture Department (DAC - UPC) working in collaboration with the Workflows and Distributed Computing group (WDC) at the Barcelona Supercomputing Center (BSC). My areas of interest are High Performance Computing, Big Data Ecosystems, and Distributed Computing. More specifically, I am focused in Programming Models for Distributed Platforms, Task Flows, Data Flows, and Streaming technologies. During my career at the BSC I have contributed in the design and development of different tools and programming models for HPC in distributed platforms, such as COMPSs, PyCOMPSs, and PMES. I have been working with Java and Python for several years under different environments and methodologies.

PERSONAL INFORMATION

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📄 StackOverflow: stackoverflow.com/users/6018655/cristian-ramon-cortes
🆔 ORCID: orcid.org/0000-0003-4170-818X

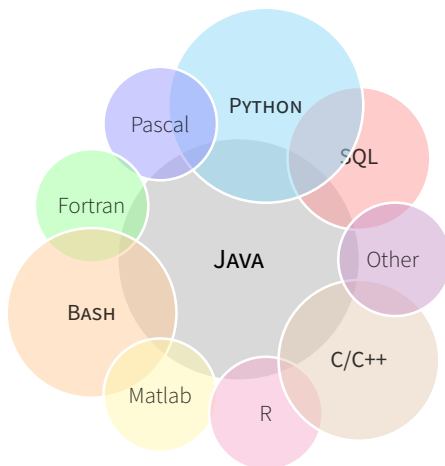
EDUCATION

2017	Master in Innovation and Research in Informatics, High Performance Computing (MIRI - HPC) Universitat Politècnica de Catalunya (UPC)
2014	Double Bachelor and Master of Engineering Diploma Centre de Formació Interdisciplinària Superior (CFIS) Universitat Politècnica de Catalunya (UPC)
2014	Bachelor and Master of Engineering in Industrial Engineering Escola Tècnica Superior d'Enginyeria Industrial de Barcelona (ETSEIB) Universitat Politècnica de Catalunya (UPC)
2014	Bachelor and Master of Engineering in Computer Science Facultat d'Informàtica de Barcelona (FIB) Universitat Politècnica de Catalunya (UPC)
2008	Primary, Secondary and General Education AULA Escola Europea

LANGUAGES

Catalan	● ● ● ● ●
Spanish	● ● ● ● ●
English	● ● ● ● ○
French	● ● ● ● ○

PROGRAMMING LANGUAGES



STRENGTHS

- Organised, methodical, and responsible
- Perfectionist, demanding, and ambitious
- Passionate, curious, and motivated
- Ease of learning
- Autonomous and teamwork
- Management and communication skills

EXPERIENCE

Today
May 2017

PhD Student, BARCELONA SUPERCOMPUTING CENTER (BSC), Spain

PhD Student for the Computer Architecture Department (DAC - UPC) working in collaboration with the Workflows and Distributed Computing group (WDC) at the Barcelona Supercomputing Center (BSC). The thesis is entitled "*Programming Models to support Data Science Workflows*" and the main research lines are:

- Orchestration of data science workflows
- Automatic parallelization of affine loops in Python
- Distributed execution of Hybrid Flows composed of Data Flows and Task Flows.
- Integration of Streaming standards and technologies inside COMPSs

Java Python Bash C++ Maven Eclipse IntelliJ Idea

May 2017
February 2016

Junior Developer, BARCELONA SUPERCOMPUTING CENTER (BSC), Spain

Junior Developer at the Workflows and Distributed Computing (WDC) group at the Barcelona Supercomputing Center (BSC). My main tasks involved:

- Enhancement of the COMPSs infrastructure and deployment
- Design and implement several features inside the COMPSs Runtime

Java Python Bash Maven Eclipse Jenkins DEB packages RPM packages

February 2016
April 2014

Resident Student, BARCELONA SUPERCOMPUTING CENTER (BSC), Spain

Resident Student at the Grid Computing group at the Barcelona Supercomputing Center (BSC). My main tasks involved:

- Build a testing infrastructure for COMPSs
- Re-design the COMPSs Monitor

Java Python Bash Maven Eclipse Jenkins ZK Framework Apache Tomcat

December 2013
September 2011

Teacher in a Student Advise Service, ACADEMIA SOL, Spain

Teacher of Bachelor and Master of Engineering students at the Academia SOL. The goal was to provide academic review and reinforcement in a simpler and closer way than the university professors. Taught subjects:

- ETSEIB: Heat Transfer, Informatics 1, Informatics 2
- EUETIB: Informatics
- FIB: Mathematics 2, Theory of Computation, Programming II

Python C++ Bash Lazarus Public Speaking

AUTOPARALLEL: A PYTHON MODULE FOR AUTOMATIC PARALLELIZATION AND DISTRIBUTED EXECUTION OF AFFINE LOOP NESTS

Cristian Ramon-Cortes, Ramon Amela, Jorge Ejarque, Philippe Clauss, Rosa M Badia

PROCEEDINGS OF THE 8TH WORKSHOP ON PYTHON FOR HIGH-PERFORMANCE AND SCIENTIFIC COMPUTING (PyHPC 2018 - SC18)
November 2018

arxiv.org/abs/1810.11268

PyCOMPSS PLUTO Automatic Parallelization HPC Distributed Computing

BOOSTING ATMOSPHERIC DUST FORECAST WITH PYCOMPSS

Javier Conejero, *Cristian Ramon-Cortes*, Kim Serradell, Rosa M. Badia

IEEE eSCIENCE 2018

September 2018

researchgate.net/publication/329309591_Boosting_Atmospheric_Dust_Forecast_with_PyCOMPSS

PyCOMPSS NMMB-MONARCH HPC Distributed Computing Big Data Dust Prediction

EXECUTING LINEAR ALGEBRA KERNELS IN HETEROGENEOUS DISTRIBUTED INFRASTRUCTURES WITH PYCOMPSS

Ramon Amela, *Cristian Ramon-Cortes*, Jorge Ejarque, Javier Conejero, Rosa M. Badia

2018 OIL AND GAS SCIENCE AND TECHNOLOGY - REVUE d'IFP (OGST)

July 2018

doi.org/10.2516/ogst/2018047

PyCOMPSS COMPSS Matmul QR Cholesky Linear Algebra HPC Distributed Computing

TRANSPARENT ORCHESTRATION OF TASK-BASED PARALLEL APPLICATIONS IN CONTAINERS PLATFORMS

Cristian Ramon-Cortes, Albert Serven, Jorge Ejarque, Daniele Lezzi, Rosa M. Badia

2017 JOURNAL OF GRID COMPUTING (JoGC)

December 2017

doi.org/10.1007/s10723-017-9425-z

COMPSS Docker Mesos Singularity Chameleon HPC Distributed Computing Containers

ENABLING PYTHON TO EXECUTE EFFICIENTLY IN HETEROGENEOUS DISTRIBUTED INFRASTRUCTURES WITH PYCOMPSS

Ramon Amela, *Cristian Ramon-Cortes*, Jorge Ejarque, Javier Conejero, Rosa M. Badia

PROCEEDINGS OF THE 7TH WORKSHOP ON PYTHON FOR HIGH-PERFORMANCE AND SCIENTIFIC COMPUTING (PyHPC 2017 - SC17)
November 2017

doi.org/10.1145/3149869.3149870

PyCOMPSS COMPSS Matmul QR Cholesky Linear Algebra HPC Distributed Computing

MASTER THESIS: ENABLING ANALYTIC AND HPC WORKFLOWS WITH COMPSS

Cristian Ramon-Cortes

UPC COMMONS

May 2017

upcommons.upc.edu/handle/2117/111458

COMPSS PyCOMPSS MPI Binary HPC Distributed Computing Analytic Workflows Task Flows Orchestration

TRANSPARENT EXECUTION OF TASK-BASED PARALLEL APPLICATIONS IN DOCKER WITH COMP SUPERSCALAR

Victor Anton, *Cristian Ramon-Cortes*, Jorge Ejarque, Rosa M. Badia

2017 25TH EUROMICRO INTERNATIONAL CONFERENCE ON PARALLEL, DISTRIBUTED AND NETWORK-BASED PROCESSING (PDP)

March 2017

doi.org/10.1109/PDP.2017.26

COMPSS Docker Chameleon HPC Distributed Computing Containers

COMP SUPERSCALAR, AN INTEROPERABLE PROGRAMMING FRAMEWORK

Rosa M. Badia, Jorge Ejarque, Daniele Lezzi, Raul Sirvent, Francesc Lordan, *Cristian Ramon-Cortes*, Javier Conejero, Carlos Diaz

SOFTWARE X

December 2015

doi.org/10.1016/j.softx.2015.10.004

COMPSS PyCOMPSS HPC Distributed Computing Big Data

PFC: DESIGN, IMPLEMENTATION, AND INTEGRATION OF A HAND FOR A DARWIN-OP ROBOT.

Cristian Ramon-Cortes Vilarrodona

UPC COMMONS

November 2014

upcommons.upc.edu/handle/2099.1/25407

3D Printing Darwin-OP SolidWorks C++ Device programming Robotics Manipulators