



# Silvia Rodríguez Alcaraz

Computer Science Engineer



Santiago de Compostela, Spain



silviaralcaraz



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silviaralcaraz.github.io



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## Interests

- High-performance computing
- Parallel programming
- Heterogeneous computing
- Performance portability
- Distributed systems

## Main tools

- C/C++
- Python
- Bash
- OpenMP
- OpenCL
- CUDA
- MPI
- SYCL
- Intel OneAPI
- AMD Vitis
- Docker
- LaTeX

## Languages

- Spanish: native
- Galician: native
- English: C1 (CEFR)

## Other info

- Driving license

## Education

2020-Now	PhD in Information Technology Research <i>University of Santiago de Compostela</i>	Spain
2019-2020	MSc in High Performance Computing <i>University of Santiago de Compostela</i>	Spain
2014-2019	BSc in Computer Science and Engineering <i>University of Santiago de Compostela</i>	Spain

## Professional experience

09/2021-Now	CITIUS: PhD student PhD thesis conducted under the FPI grant program of the Spanish Ministry of Science. It explores the development of heterogeneous solutions in distributed environments using a high-level approach.	Spain
09/2024-12/2024	ETH Zürich: Guest researcher Guest researcher at the Systems Group, analyzing the performance and memory management of HLS applications for data center FPGAs while conducting comparisons with GPUs.	Switzerland
05/2023-07/2023	Universidade do Minho: Guest researcher IACOBUS grant holder in the Embedded Systems Research Group, developing a real-time segmentation for terrestrial LiDAR point clouds using C++, ROS2 and studying its acceleration on FPGA.	Portugal
07/2020-09/2021	CITIUS: Research Support Technician Vegetation characterization using airborne 3D point clouds.	Spain
04/2020-05/2020	CESGA: Graduated intern Parallelization of machine learning model training using Horovod.	Spain
11/2019-06/2020	CITIUS: MEC Collaboration Grant Efficient processing of airborne LiDAR data using C/C++ and OpenMP.	Spain
06/2018-08/2018	Hewlett Packard CDS: Undergraduated intern System and network administration tasks for health project.	Spain

## Teaching experience

- University of Santiago de Compostela: Computer Science Degree
  - Spring 2025: Teaching assistant, "Operating Systems II".
  - Fall 2023: Teaching assistant, "Networks".
  - Fall 2022: Teaching assistant, "Operating Systems I".

## Publications

2024	Journal of Supercomputing (Springer) Alcaraz, S.R., Laso, R., Lorenzo, O.G. et al. Assessing Intel OneAPI capabilities and cloud-performance for heterogeneous computing. <i>J Supercomput</i> 80, 13295–13316 (2024). <a href="https://doi.org/10.1007/s11227-024-05958-5">https://doi.org/10.1007/s11227-024-05958-5</a>	Journal article
2023	CMMSE Alcaraz, S.R., Laso, R., Lorenzo, O.G. et al. Performance evaluation of heterogeneous CPU+iGPU and CPU+FPGA schemes using Intel OneAPI on the cloud. <i>International Computational and Mathematical Methods in Science and Engineering Conference (CMMSE)</i> , Rota, Spain (2023).	Conference communication

## Remarkable projects

2019	FlinkBWA Use of <i>Big Data</i> technologies for the alignment of genetical sequences	BSc thesis
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