

# Camilo Chacón Sartori

COMPUTER SCIENTIST

Barcelona, Spain.

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*My research focuses on enhancing optimization algorithms through the integration of modern machine learning techniques, aiming to improve both the quality of solutions and their interpretability.*

## Publications

- 2024 **Chacón Sartori, Camilo & Blum, Christian & Bistaffa, Filippo & Rodríguez Corominas, Guillem**, Metaheuristics and Large Language Models Join Forces: Towards an Integrated Optimization Approach. Submitted to an international journal. arXiv: <https://arxiv.org/abs/2405.18272>
- 2024 **Chacón Sartori, Camilo & Blum, Christian & Ochoa, Gabriela**, An Extension of STNWeb Functionality: On the Use of Hierarchical Agglomerative Clustering as an Advanced Search Space Partitioning Strategy. Genetic and Evolutionary Computation Conference (GECCO), Melbourne, Australia. **Ranking A** (CORE).
- 2024 **Chacón Sartori, Camilo & Blum, Christian & Ochoa, Gabriela**, Large Language Models for the Automated Analysis of Optimization Algorithms. Genetic and Evolutionary Computation Conference (GECCO), Melbourne, Australia. **Ranking A** (CORE).
- 2023 **Chacón Sartori, Camilo & Blum, Christian & Ochoa, Gabriela**, STNWeb: A new visualization tool for analyzing optimization algorithms. Software Impacts (Journal).
- 2023 **Ramírez Sánchez, Jairo Enrique & Chacón Sartori, Camilo & Blum, Christian**, Q-Learning Ant Colony Optimization supported by Deep Learning for Target Set Selection. Genetic and Evolutionary Computation Conference (GECCO), Lisboa, Portugal. **Ranking A** (CORE).
- 2023 **Chacón Sartori, Camilo & Blum, Christian**, Search Trajectory Networks Meet the Web: A Web Application for the Visual Comparison of Optimization Algorithms. International Conference on Software and Computer Applications (ICSCA), Kuantan, Malasia.
- 2022 **Chacón Sartori, Camilo & Blum, Christian**, Boosting a Genetic Algorithm with Graph Neural Networks for Multi-Hop Influence Maximization in Social Networks. **Best Paper Award** (Workshop on Computational Optimization). Federated Conference on Computer Science and Information Systems (FedCSIS), Sofia, Bulgaria. **Ranking B** (CORE).

## Books

- 2023 **Technical Book**, Principios de programación (spanish). *Marcombo publisher*
- 2021 **Scientists Divulgation Book**, Mentes geniales. La vida y obra de 12 grandes informáticos (spanish). *Marcombo publisher*
- 2020 **Technical Book**, Computación y programación funcional (spanish). *Marcombo publisher*

## Awards

- 2022 **Federated Conference on Computer Science and Information Systems (FedCSIS)**, Best Paper Award (Workshop on Computational Optimization). *Scientific Conference*
- 2018-2021 **Quora (in Spanish)**, I was selected as Best Writer on QuoraES for five consecutive years (2018-2022), for my over 800 answers on computer science. *Social network*
- 2014 **MiningTag S.A.**, The company chose me as the best worker of the year 2014, for my contributions to the development of the company's first software. *Company*

## Education

Grading scale from 1.0 to 7.0

**PhD in Computer Science - Specialized in Artificial Intelligence**

*Barcelona, Spain*

IIIA-CSIC & UNIVERSIDAD AUTÓNOMA DE BARCELONA

*2021 - Current*

- Thesis advisor: Christian Blum.
- Awarded a 4-year scholarship (*Ayudas para contratos predoctorales para la formación de doctores*, 09/2021-09/2025).
- Researching in the area of hybrid algorithms combining classical optimization techniques with modern Machine Learning methods (particularly Deep Learning and Large Language Models) to solve combinatorial problems.

## M.S. Computer Science

PONTIFICIA UNIVERSIDAD CATÓLICA DE VALPARAÍSO

- **Graduated with highest distinction. First in my class.**
- Thesis: "Solving the non-unicost set covering problem by using three new binary algorithms".
- Relevant courses: *Big Data Mining* (6.7), *Metaheuristics* (7.0), and *Combinatorial Optimization* (7.0).
- Defense grade: 7.0 - Final grade average: 6.9

Valparaíso, Chile

2017 - 2018

## Bachelor Computer Science

UNIVERSIDAD DE LOS LAGOS

- **Graduated with highest distinction.**
- Thesis exam grade: 7.0 - Final grade average: 6.0

Santiago, Chile

2011 - 2015

## Teaching

2024 **Bootcamp**, Bootcamp de Large Language Models and Artificial Intelligence.

Código Facilito

(México)

2023-2024 **Bootcamp**, Bootcamp de Ciencias de la Computación.

Código Facilito

(México)

2023 **Master's degree course**, Blockchain y Contratos Inteligentes.

Universidad Adolfo

Ibañez (Chile)

## Experience

### Telefónica R&D Spain

SOFTWARE DEVELOPER

- I was part of the team that developed cybersecurity software, specifically designed for performing static analysis of malware to detect malicious executables.

Barcelona, Spain

2018 - 2021

### Telefónica R&D Chile

SOFTWARE DEVELOPER

- Implemented various big data processes for analyzing urban mobility data. Also designed and implemented an embedded system on a Raspberry Pi for video recording, people detection, and hotspot enablement.

Santiago, Chile

2017 - 2018

### MiningTag S.A.

SOFTWARE ENGINEER

- Led the architecture design of the company's main software. Developed network programming solutions for creating a queue system for underground mining software.
- Also, I developed network programming solutions to create a queuing system for underground mining software. The instability of connections, caused by the physical environment, required meticulous software design decisions.

Santiago, Chile

2013 - 2017

## Skills

### Programming

Python, Julia, C++ (OpenMP), C (MPI), Php, Ruby, Javascript/Node.js, Java, C#, Haskell, Perl, Bash, AWK, R, Matlab, Scala

### Machine learning

Scikit-learn, Keras, Pytorch, Tensorflow, LLMs tools

### Bigdata

Apache Spark, Hadoop, Oozie, Kafka, Drill, Hive, PigLatin

### Database

MS SQL Server, Mysql, HBase, PostgreSQL, MongoDB, Redis

### Operating System

Unix, MS Windows

### Cloud Computing

AWS, Azure

## Non-academic Talks

2023 **PyDay Barcelona**, Introducción a Mojo

Barcelona, Spain

2023 **Python Valencia**, ¿La optimización prematura es la raíz de todos los males en programación?

Valencia, Spain

2022 **PyConES**, Introducción a las redes complejas en Python (taller).

Granada, Spain

2022 **PyBCN**, Aprendizaje a través de grafos: Graph Neural Networks.

Barcelona, Spain

2021 **Proin**, Fundamentos de la computación: desde una visión matemática, científica y filosófica.

Online

2018 **Starsconf**, Introducción a Julia.

Santiago, Chile

2018 **Proin**, Introducción a la computación paralela con Julia.

Santiago, Chile

2016 **Proin**, Introducción a Machine Learning.

Santiago, Chile

2016 **NodersJS**, Introducción a ZeroMQ y Node.js: Para construir sistemas distribuidos de mensajería.

Santiago, Chile

## Other

**Date of birth:** 20/04/1989

Castro, Chile

**Personal website:** <http://camilochacon.com/>

**Podcast:** <https://algoritmo.buzzsprout.com/>

**Newsletter:** <https://camilocs.substack.com>