

Camilo Chacón Sartori

COMPUTER SCIENTIST

Barcelona, Spain.

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I solve problems with code, concepts, and curiosity.

Academic Profile

Google Scholar (Sept. 2025), Citations: 75 • h-index: 6 • i10-index: 3

ORCID, 0000-0002-8543-9893

Education

Grading scale from 1.0 to 7.0

PhD in Computer Science - Specialized in Artificial Intelligence

Barcelona, Spain

2021 - Current

IIIA-CSIC & UNIVERSIDAD AUTÓNOMA DE BARCELONA

• **Expected PhD defense: November 2025.**

• **Supervisor:** Christian Blum.

• Awarded a 4-year scholarship (*Ayudas para contratos predoctorales para la formación de doctores*, 09/2021-09/2025).

• PhD research focused on developing hybrid algorithms that integrate classical optimization techniques with modern Machine Learning approaches—particularly Deep Learning and Large Language Models—to tackle complex combinatorial problems efficiently.

M.S. Computer Science

Valparaíso, Chile

2017 - 2018

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

Bachelor Computer Science

Santiago, Chile

2011 - 2015

UNIVERSIDAD DE LOS LAGOS

• **Graduated with highest distinction.**

• Thesis exam grade: 7.0 - Final grade average: 6.0

Research Experience

University of Concepcion

Concepción, Chile

May 2025

RESEARCH COLLABORATION

• Explored the application of Large Language Models (LLMs) to the Longest Run Subsequence (LRS) problem, designing methods to integrate LLM-generated heuristics with classical combinatorial optimization techniques.

• **Supervisor:** Pedro Pinacho-Davidson

Nokia Bell Labs

Paris, France

October - November 2024

RESEARCH INTERN

• Developed Small Language Models (SLMs) with agent-based frameworks for Knowledge Graphs, investigating innovative methods to enhance graph-based reasoning and information extraction.

• **Supervisor:** Alonso Silva

Professional Experience

Telefónica R&D Spain

Barcelona, Spain

2018 - 2021

SOFTWARE DEVELOPER

• Developed advanced cybersecurity tools for static malware analysis, enabling early detection of malicious executables at scale.

• Designed and implemented internal components for automated binary analysis, improving efficiency and accuracy of threat detection pipelines.

Telefónica R&D Chile

Santiago, Chile

SOFTWARE DEVELOPER

2017 – 2018

- Built and deployed big data pipelines to extract actionable insights from urban mobility datasets, enhancing decision-making capabilities.
- Developed an edge-computing prototype on Raspberry Pi, integrating video capture, computer vision-based people detection, and Wi-Fi hotspot activation for smart city applications.

MiningTag S.A.

Santiago, Chile

SOFTWARE ENGINEER

2013 – 2017

- Led the design and implementation of the company's core software architecture, boosting system robustness and scalability across mining operations.
- Engineered a fault-tolerant queuing system for underground mining environments with unstable connectivity, ensuring continuous data flow and operational integrity.
- Reduced communication latency by 30% and increased production control system reliability to over 90%, directly improving operational efficiency and decision-making accuracy.

Publications

2025	Chacón Sartori, Camilo & Isla, Martín & Pinacho, Pedro & Blum, Christian, LLM-Based Instance-Driven Heuristic Bias in the Context of a Biased Random Key Genetic Algorithm. Preprint/Under review.	Journal
2025	Chacón Sartori, Camilo , Architectures of Error: A Philosophical Inquiry into AI and Human Code Generation. Preprint/Under review.	Journal
2025	Chacón Sartori, Camilo & Blum, Christian, Combinatorial Optimization for All: Using LLMs to Aid Non-Experts in Improving Optimization Algorithms. Preprint/Under review.	Journal
2025	Chacón Sartori, Camilo & Blum, Christian, Improving Existing Optimization Algorithms with LLMs. Preprint/Under review.	Conference
2024	Chacón Sartori, Camilo & Blum, Christian & Bistaffa, Filippo, VisGraphVar: A Benchmark Generator for Assessing Variability in Graph Analysis Using Large Vision-Language Models. IEEE Access (SJR, Q1).	Journal
2024	Chacón Sartori, Camilo & Blum, Christian & Bistaffa, Filippo & Rodríguez Corominas, Guillem, Metaheuristics and Large Language Models Join Forces: Toward an Integrated Optimization Approach. IEEE Access (SJR, Q1).	Journal
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).	Conference
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).	Conference
2024	Chacón Sartori, Camilo & Blum, Christian, STNWeb for the Analysis of Optimization Algorithms: A Short Introduction. Metaheuristics International Conference (MIC).	Conference
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).	Conference
2023	Chacón Sartori, Camilo & Blum, Christian & Ochoa, Gabriela, STNWeb: A new visualization tool for analyzing optimization algorithms. Software Impacts. (SJR, Q3)	Journal
2023	Chacón Sartori, Camilo & Blum, Christian & Ochoa, Gabriela, 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.	Conference
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).	Conference

Tools

2025	Search Trajectory Networks Analytics (STN Analytics) , a tool for the visual analysis of Search Trajectory Networks.	Scientific tool
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Scientific Community Service

2025	Nature Communications , Peer Reviewer (1 review)	<i>Journal</i>
2025	Communications Materials , Peer Reviewer (1 review)	<i>Journal</i>
2025	Scientific Reports , Peer Reviewer (1 review)	<i>Journal</i>
2025	Machine Vision and Applications , Peer Reviewer (1 review)	<i>Journal</i>
2025	Knowledge and Information Systems , Peer Reviewer (1 review)	<i>Journal</i>
2025	Evolutionary Intelligence , Peer Reviewer (1 review)	<i>Journal</i>

Books

2026	Academic Book , <u>Search Trajectory Networks</u> . Work in progress, together with Christian Blum and Gabriela Ochoa.	<i>Springer</i>
2025	Scientists Divulcation Book , <u>Palabras y Algoritmos - Cómo la IA transformará la escritura</u> .	<i>Marcombo</i>
2023	Technical Book , <u>Principios de programación</u> .	<i>Marcombo</i>
2021	Scientists Divulcation Book , <u>Mentes geniales. La vida y obra de 12 grandes informáticos</u> .	<i>Marcombo</i>
2020	Technical Book , <u>Computación y programación funcional</u> .	<i>Marcombo</i>

Awards

2022	Federated Conference on Computer Science and Information Systems (FedCSIS) , Best Paper Award (Workshop on Computational Optimization).	<i>Scientific Conference</i>
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.	<i>Company</i>
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.	<i>Social network</i>

Teaching

2024	Bootcamp , <u>Bootcamp de Large Language Models and Artificial Intelligence</u> .	<i>Código Facilito (México)</i>
2023-2024	Bootcamp , <u>Bootcamp de Ciencias de la Computación</u> .	<i>Código Facilito (México)</i>
2023	Master's degree course , <u>Blockchain y Contratos Inteligentes</u> .	<i>Universidad Adolfo Ibañez (Chile)</i>

Independent Data Science Consultant

2024 – Present	Vigalab S.A. , Advising on the integration of AI-driven optimization algorithms to enhance production control and operational efficiency in mining operations.	<i>Chile</i>
2024 – Present	Alza Group , Conducting technical due diligence for a mining-focused investment fund, assessing software architectures and evaluating the algorithmic robustness of candidate startups.	<i>Chile</i>

Skills

Programming	Python, Julia, C++ (OpenMP), C (MPI), Java, C#, Haskell, Rust, JavaScript/Node.js, Bash, R, Matlab, Scala
Machine Learning & AI	Scikit-learn, Keras, PyTorch, TensorFlow, Hugging Face Transformers, LangChain, LLM APIs (OpenAI, Anthropic, Cohere)
Big Data & Analytics	Apache Spark, Hadoop, Kafka, Drill, Hive, Oozie, PigLatin, Delta Lake
Databases	MS SQL Server, MySQL, PostgreSQL, MongoDB, Redis, HBase, Neo4j, ArangoDB
Operating Systems	Linux/Unix, Windows, MacOS
Cloud & Deployment	AWS, Azure, GCP, Docker, Kubernetes, MLflow, Hugging Face Hub
Generative AI & LLM Tools	ChatGPT, Claude, Gemini, MidJourney, DALL-E, Stable Diffusion, Code LLMs (Codex, Code LLaMA)

Non-academic Talks

2023	PyDay Barcelona , Introducción a Mojo	<i>Barcelona, Spain</i>
2023	Python Valencia , ¿La optimización prematura es la raíz de todos los males en programación?	<i>Valencia, Spain</i>
2022	PyConES , Introducción a las redes complejas en Python (taller).	<i>Granada, Spain</i>
2022	PyBCN , Aprendizaje a través de grafos: Graph Neural Networks.	<i>Barcelona, Spain</i>
2021	Proin , Fundamentos de la computación: desde una visión matemática, científica y filosófica.	<i>Online</i>
2018	Starsconf , Introducción a Julia.	<i>Santiago, Chile</i>
2018	Proin , Introducción a la computación paralela con Julia.	<i>Santiago, Chile</i>
2016	Proin , Introducción a Machine Learning.	<i>Santiago, Chile</i>
2016	NodersJS , Introducción a ZeroMQ y Node.js: Para construir sistemas distribuidos de mensajería.	<i>Santiago, Chile</i>

Other

Date of birth: 20/04/1989	<i>Castro, Chile</i>
Personal website: http://camilochacon.com/	
Podcast: https://algoritmo.buzzsprout.com/	
Newsletter: https://camilocs.substack.com	