

Camilo Chacón Sartori

COMPUTER SCIENTIST

Barcelona, Spain.

✉ camilochs@gmail.com | 🏠 www.camilochacon.com | 📧 camilochs | 🌐 camilo-chacon-sartori

I solve problems with code, concepts, and curiosity.

Academic Profile

Current Position, AI Research Engineer (Postdoc) in Catalan Institute of Nanoscience and Nanotechnology (ICN2). Barcelona, Spain.

Octubre 2025 - Now

Google Scholar (January 2026), Citations: 91 • h-index: 6 • i10-index: 3

ORCID, 0000-0002-8543-9893

Publications

- | | | |
|------|---|------------|
| 2025 | Chacón Sartori, Camilo & Blum, Christian, irace-evo: Automatic Algorithm Configuration Extended With LLM-Based Code Evolution. Preprint/Under review. | Conference |
| 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, Optimizing the Optimizer: An Example Showing the Power of LLM Code Generation. Proceedings of FedCSIS 2025: IEEE press; In press. | 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 (JCR, Q2). | 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 (JCR, Q2). | 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. (JCR, 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

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 - 2025
- Graduated with highest distinction. Cum Laude. International Mention. - Supervisor: Christian Blum. - Awarded a 4-year scholarship (<i>Ayudas para contratos predoctorales para la formación de doctores</i>, 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
PONTIFICIA UNIVERSIDAD CATÓLICA DE VALPARAÍSO	2017 - 2018
- Graduated with highest distinction. First in my class. - Thesis: “Solving the non-unicost set covering problem by using three new binary algorithms”. - Relevant courses: <i>Big Data Mining</i> (6.7), <i>Metaheuristics</i> (7.0), and <i>Combinatorial Optimization</i> (7.0). - Defense grade: 7.0 - Final grade average: 6.9	
Bachelor Computer Science	Santiago, Chile
UNIVERSIDAD DE LOS LAGOS	2011 - 2015
- Graduated with highest distinction. - Thesis exam grade: 7.0 - Final grade average: 6.0	

Research Experience

University of Concepcion	Concepción, Chile
RESEARCH COLLABORATION	April 2023 - May 2025
- The objective of the first visit was to learn about the hybrid metaheuristic CMSA (Construct, Merge, Solve & Adapt) that has been developed by Prof. Pinacho Davidson during his PhD. - The objective of the second visit was to explore 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
RESEARCH INTERN	October – November 2024
- 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
SOFTWARE DEVELOPER	2018 – 2021
- 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.

Tools

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| 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

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| 2025 | Nature Communications , Peer Reviewer (1 review) | Journal |
| 2025 | Computers & Operations Research , Peer Reviewer (1 review) | Journal |
| 2025 | Communications Materials , Peer Reviewer (1 review) | Journal |
| 2025 | Scientific Reports , Peer Reviewer (1 review) | Journal |
| 2025 | Machine Vision and Applications , Peer Reviewer (1 review) | Journal |
| 2025 | Knowledge and Information Systems , Peer Reviewer (1 review) | Journal |
| 2025 | Evolutionary Intelligence , Peer Reviewer (1 review) | Journal |

Books

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

Awards

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|-----------|--|-----------------------|
| 2022 | Federated Conference on Computer Science and Information Systems (FedCSIS) , Best Paper Award (Workshop on Computational Optimization). | Scientific Conference |
| 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 |
| 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 |

Teaching

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

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.

Chile
- 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.

Chile

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)

Other

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

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

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

Newsletter: <https://camilocs.substack.com>
- Castro, Chile