David Campo

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Date of birth: 05 March 1985
Based in Antibes, France
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Career objectives

Dynamic, team-oriented systems engineering professional with a Ph.D. in Computational Intelligence, committed to lifelong learning and technological advancement. Eager to contribute to applied projects that drive social impact through AI innovations, including Machine Learning and Generative AI, while fostering open, collaborative environments. Dedicated to leveraging creative problem-solving and embracing diverse perspectives to drive team success.

Working experience

11/2022 – present — **Senior technical expert and evangelist at "FIWARE Foundation"**, At FIWARE, he applies his expertise in algorithm analysis, AI/ML, and distributed systems to enhance open-source software solutions. He has made contributions to several key projects. Also, he chairs the Machine Learning Task Force in FIWARE community, orchestrating regular meetings to foster AI discourse within the community. His leadership aims to develop a new Reference Architecture for integrating ML into FIWARE solutions, alongside the publication of relevant manuscripts and conducting AI-focused webinars.
Role: Technical expert, technology evangelist

02/2020 – 08/2021 — **Applied research engineer at "Onhys"**, Developing an integration system for automatic data treatment of crowds behavior. This includes, but is not limited to, the design of software architecture and software developing for automatic calibration of a crowd simulator. Also, the combination of different sources of information (as video and IoT analysis regarding the crowd trajectories) using elements of Machine Learning is an important part of job activities.
Role: Systems engineer, applied researcher

08/2019 – 01/2020 — **Consultant engineer at "Alten"**, Solve real life problems using machine learning. Developing models for classification and data analysis. Creation of data analysis reports
Role: Data scientist

10/2018 – 04-2019 — **Sr. Developer at "Igara Studio"**, Design and implementation of features and bug correction of Aseprite implemented in C++
Role: Developer

09/2016 – 12/2018 — **Sr. Developer at "Avature"**, Design and implementation of features and bug correction of a SaaS system using PHP, MySQL, JavaScript
Role: Developer

04/2012 – 09/2016 — **PhD Student in Engineering with a CONICET scholarship**, *Signals, Systems and Computational Intelligence*, Facultad de Ingeniería y Cs. Hídricas, Universidad Nacional del Litoral, Santa Fe, Argentina

03/2011 – 03/2012 — **Internship at "Tribunal de cuentas de la provincia de Santa Fe"**, Maintenance of a legacy system in PHP and MySQL. Developing a new system in Java
Role: Developer
Supervisor: Lic. Graciela Forzani

03/2004 – 12/2007 — **Scolarship at "Systems Laboratory" at Facultad Regional Santa Fe, Universidad Tecnológica Nacional**, Maintenance of hardware and software
Role: Systems and network administrator
Supervisor: Eng. Carlos Giorgetti

Education

October 2024 – present   **PhD in Telematics Systems Engineering**, *Design and Implementation of Architectures for AI-Powered Digital Twins*, Full title: "Diseño e Implementación de Arquitecturas para el Desarrollo de Gemelos Digitales Potenciados por Inteligencia Artificial Generativa mediante Datos de Contexto, Grafos de Conocimiento y Datos Enlazados"
Universidad Politécnica de Madrid, Spain

July 2022   **Boot-camp: Developer in Artificial Intelligence**, Project subject: "Detection of skin diseases in images using deep learning algorithms", Le Wagon, Nice, France
Graduation date: July/2022

April 2019   **PhD in Engineering**, *Signals, Systems and Computational Intelligence*, Thesis subject: "Validation of Clustering Algorithms", Facultad de Ingeniería y Cs. Hídricas, Universidad Nacional del Litoral, Santa Fe, Argentina
Graduation date: April/2019

March 2012   **Systems Engineering**, Facultad Regional Santa Fe, Universidad Tecnológica Nacional, Santa Fe, Argentina

Teaching qualifications and research experience

Teaching

06/2021 – 08/2021   **Teaching Professor**, *Predictive algorithms in Data Science*, Diplomado en Ciencias de Datos, 28 hs
Escuela de Negocios, Fundación Libertad.

09/2010 – 07/2019   **Teaching Assistant**, *Competitive Programming*
Facultad Regional Santa Fe, Universidad Tecnológica Nacional, Santa Fe, Argentina.

05/2010 – 03/2012   **Teaching Assistant**, *Operating Systems*
Facultad Regional Santa Fe, Universidad Tecnológica Nacional, Santa Fe, Argentina.

02/2006 – 03/2008   **Teaching Assistant**, *Programming paradigms*
Facultad Regional Santa Fe, Universidad Tecnológica Nacional, Santa Fe, Argentina.

Research

04/2012 – 04/2019   **Graduate Research Fellow**, *PhD student*, Research Institute for Signals, Systems and Computational Intelligence, Facultad de Ingeniería y Cs. Hídricas, Universidad Nacional del Litoral, Consejo Nacional de Investigaciones Científicas y Técnicas, Santa Fe, Argentina
Advisor: Georgina S. Stegmayer
Co–Advisor: Diego H. Milone

12/2011 – 09/2012   **Undergraduate Research Fellow**, Project subject: "Stability analysis of clustering solutions in Bioinformatics", Facultad Regional Santa Fe, Universidad Tecnológica Nacional, Santa Fe, Argentina
Advisor: Georgina Stegmayer

Publications

2025   **Campo, David Nazareno; Conde, Javier; Alonso, Álvaro; Huecas, Gabriel; Salvachúa, Joaquín; Reviriego, Pedro**, *"Real-time Spatial Retrieval Augmented Generation for Urban Environments"*, Under major revision (journal submission), arXiv preprint: https://doi.org/10.48550/arXiv.2505.02271, Year: 2025, Subjects: cs.AI

2025   **Fu, Tairan; Campo, David Nazareno; Coronado-Blázquez, Javier; Conde, Javier; Reviriego, Pedro; Lombardi, Fabrizio**, *"Stochastic Streets: A Walk Through Random LLM Address Generation in Four European Cities"*, Computer, IEEE, DOI: https://doi.org/10.1109/MC.2025.3611067, Status: in press, Year: 2025

2016   **Campo, David; Stegmayer, Georgina; Milone Diego**, *"A new index for clustering validation with overlapped clusters"*, Expert Systems with Applications, Elsevier, DOI: http://dx.doi.org/10.1016/j.eswa.2016.08.021, Year: 2016, Volume: 64, Pages: 549–556

2014 **Campo, David; Stegmayer, Georgina; Milone Diego**, *"Análisis de estabilidad en clusters solapados"*, Revista Iberoamericana de Inteligencia Artificial, Number: 53, Volume: 17, Pages: 78–89

2013 **Campo, David; Stegmayer, Georgina; Milone Diego**, *"Nuevo índice para el análisis de estabilidad en clusters solapados"*, Simposio Argentino de Inteligencia Artificial. 42 Jornadas Argentinas de Informática, ISSN: 1850–2784. Pages: 24–35
Córdoba, Argentina

2012 **Campo, David; Rindisbacher, Anibal**, *"Análisis de estabilidad de soluciones de Clustering en bioinformática"*, 15^{avo} Concurso de trabajos estudiantiles. 41 Jornadas Argentinas de Informática, ISBN: 1850–2946. Pages: 26–40
La Plata, Buenos Aires, Argentina

2011 **Campo, David; Gutiérrez, María; Vega, Jorge; Roa, Jorge; Stegmayer, Georgina; Loyarte, Ariel**, *"Operación de una Planta de Nivel. Evaluación de una Estrategia de Control basada en Agentes Inteligentes"*, 12th AST Argentine Symposium on Technology. 40 Jornadas Argentinas de Informática, ISSN: 1850–2806

Technical skills

Programming Languages, *Basic, C/C++, Java, Matlab/GNU Octave, ProLog, Python, R, Shell Scripting (bash)*

Project Management & Documentation, *Latex, SVN, GIT*

Programming Techniques & Algorithm Design, *Dynamic Programming, Backtracking, Greedy Algorithms, Graph algorithms, Geometric Programming*

Iot and Blockchain, *FIWARE Expert, Arduino, Raspberry Pi*

Blockchain and DeFi, *Consensus algorithms, Smart Contracts*

Concepts, *Artificial Intelligence, Machine Learning, Data Mining, Clustering*

Presentations at congresses, conferences, workshops and seminars

05/2025 **FIWARE Global Summit XI. Tech Training**, *"Talking with your Smart Solution"*, Rabat, Morocco, Expositor
Presented a smart agriculture use case developed to integrate Generative AI (LLM) into a FIWARE smart solution, allowing to interact with technical content in natural language. A link to the slides and code: `https://github.com/dncampo/fgs2025-talking-with-smart-solution`.

05/2025 **FIWARE Global Summit XI. Tech Training**, *"ML, MLOps & FIWARE."*, Rabat, Morocco, Expositor
Showcase an approach into integrating ML and MLOps in FIWARE workflow, using entities and data models to represent objects and artifacts related to ML and its life cycle. A link to the slides and code: `https://github.com/dncampo/fgs2025-digit-recognizer-ml/tree/main/slides`.

09/2024 **FIWARE Global Summit X. Tech Training**, *"Getting value out of your context Data: Integrating ML models into FIWARE applications"*, Naples, Italy, Expositor
Presented a health use case developed to integrate FIWARE and ML. A link to the slides and code: `https://github.com/dncampo/FGS2024_ML-training/tree/main`.

09/2024 **FIWARE Global Summit X. Tech and Trends**, *"Integration of LLMs within the Context Broker"*, Naples, Italy, Expositor along with Javier Conde Diaz
Presented a novel method to connect LLMs with NGSI API and take advantage of NGSI to perform a Real-Time Spatial RAG over tourism data. A link to the agenda: `https://www.fiware.org/global-summit/agenda/`, link to slides and code `https://github.com/ging/Poc_LLM_CB_FIWARE-Naples`.

09/2024 **FIWARE Global Summit X. Tech and Trends**, *"Roadmap and activities within the AI/ML Working Group"*, Naples, Italy, Expositor along with Joaquin Salvachua
Presented the activities performed and the plan for the year ahead of the FIWARE AI/ML Working Group, during the 10th edition of the FGS. A link to the agenda: `https://www.fiware.org/global-summit/agenda/`.

09/2024 **FIWARE Webinar**, *"Enhancing Tourism with Smart Technologies"*, YouTube, Expositor along with Javier Conde Diaz

This session delves into the integration of FIWARE with the powerful capabilities of Large Language Models (LLMs) equipped with Retrieval Augmented Generation (RAG). It explores an innovative architecture that leverages FIWARE's NGSI API to enrich the contextual information available to tourists. A link to video on YouTube `https://www.youtube.com/watch?v=SHUnETH4wDo`.

06/2023 **FIWARE Global Summit IX. Disruptive Tech and Trends: AI and Machine Learning**, *"FIWARE AI/ML roadmap activities"*, Vienna, Austria, Expositor along with Joaquin Salvachua

Presented the activities performed and the plan for the year ahead of the FIWARE AI/ML Working Group, during the 9th edition of the FGS. A link to the agenda: `https://www.fiware.org/fiware-summit/vienna-2023/FGS23_Programme.pdf`.

09/2013 **XIV Argentine Symposium on Artificial Intelligence (42 JAIIO)**, *"Análisis de estabilidad de soluciones de Clustering en bioinformática"*, Córdoba, Argentina
Author/Expositor

08/2012 **15^{avo} Concurso de trabajos estudiantiles (41 JAIIO)**, *"Nuevo índice para el análisis de estabilidad en clusters solapados"*, La Plata, Buenos Aires, Argentina
Author/Expositor

10/2012 **Seminar at Facultad Regional Santa Fe, Universidad Tecnológica Nacional**, *"Introduction to Version Control Systems"*, Campo D., Del Castillo J. , Fausd J., Santa Fe, Argentina
Lecturer

10/2011 **Seminar at Facultad Regional Santa Fe, Universidad Tecnológica Nacional**, *"Introduction to Version Control Systems"*, Campo D., Del Castillo J. , Fausd J., Santa Fe, Argentina
Lecturer

Participation in Research Grants

2014 – 2017 **"Minería de datos en bioinformática: integración y análisis basados en inteligencia computacional"**, *Project PICT 2014-2627*
Role: Collaborator
Supervisor researcher: Diego Milone

2013 – 2015 **"Minería de datos en bioinformática: un enfoque integrado basado en inteligencia computacional"**, *Project PIP 2013-2015 #117*
Role: Collaborator
Supervisor researcher: Georgina Stegmayer, Diego Milone

04/2011 – 12/2011 **"Data Mining with Neural Networks"**, *Project PID O130: UTN–FRSF*, Neural Mining: minería de datos con redes neuronales, CIDISI–FRSF–UTN
Role: Collaborator
Supervisor researcher: Georgina Stegmayer

2007 – 2008 **"Identifying Interorganizational Networks: A Factor Based Approach"**, *Project INV-1962*, Proyecto Universia-Banco Río para la investigación aplicada al desarrollo regional, INGAR–CONICET
Role: Collaborator
Supervisor researcher: Marcelo Montagna

Participation in contests

continuously **"Several online programming/mathematics contests"**, *SPOJ, UVa, Google CodeJam, Codefights, HackerRank, Brilliant*

10/2015 **"Latinamerican Rally of Innovation"**, *(Rally Latinoamericano de Innovación)*, Consejo Federal de Decanos de Facultades de Ingeniería (CONFEDI)
Role: Contestant.
Duration: 28h.
Position: 1st, Innovation category

09/2015   **"TecnoMate 2015"**, *Programming contest*, Department of Systems, Facultad Regional Santa Fe, Universidad Tecnológica Nacional
Role: Organization, problem setter.
Duration: 4h.

10/2014   **"TecnoMate 2014"**, *Programming contest*, Department of Systems, Facultad Regional Santa Fe, Universidad Tecnológica Nacional
Role: Organization, problem setter
Duration: 4h.

11/2013   **"TecnoMate 2013"**, *Programming contest*, Department of Systems, Facultad Regional Santa Fe, Universidad Tecnológica Nacional
Role: Organization, problem setter
Duration: 4h.

10/2010   **"ACM International Collegiate Programming Contest"**, *Programming contest*, ACM, IBM
Role: Contestant.
Duration: 5h.

08/2010   **"Programming Contest – CNEISI"**, Department of Systems, Facultad Regional Santa Fe, Universidad Tecnológica Nacional
Role: Contestant.
Duration: 5h. Position: 2nd

10/2009   **"ACM International Collegiate Programming Contest"**, *Programming contest*, ACM, IBM
Role: Contestant.
Duration: 5h.

09/2009   **"1st Provincial contest of competitive programming"**, *(1er Encuentro provincial Santafesino de programación competitiva)*, Department of Systems, Facultad Regional Santa Fe, Universidad Tecnológica Nacional, Colegio de ingenieros especialistas de la provincia de Santa Fe, Gobierno de Santa Fe – Ministerio de la producción
Role: Contestant.
Duration: 3.5h.
Position: 2nd.

Languages

Spanish
Native

English, French, Italian
Fluent

Portuguese
Advanced

German, *Beginner*

Interests & hobbies

Learning, reading, sports & outdoor activities, languages & cultures, travel, hiking, networking.