FRANCISCO CAMACHO

Physicist & Educator | Former CTO & AI Architect | University Lecturer in Physics & Numerical Methods

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PROFESSIONAL SUMMARY

Physicist and technologist with extensive experience bridging theoretical physics, computational methods, and enterprise AI systems. Over 8 years of university-level teaching experience in physics and numerical methods, combined with 7+ years in the tech industry building production-grade AI systems. Deep expertise in computational physics, machine learning, and pedagogical delivery of complex technical concepts. Proven track record in developing educational content at scale, with courses reaching 50,000+ students on Platzi. Former Co-Founder and CTO with hands-on experience leading technical teams and implementing cutting-edge AI architectures. Published researcher in computational physics with a Master's degree from Universidade Federal de Minas Gerais.

CORE COMPETENCIES

- Teaching & Pedagogy: University-level instruction in Physics, Numerical Methods, and Data Science; curriculum development; online course creation
- Physics & Mathematics: Classical Mechanics, Electromagnetism, Thermodynamics, Fluid Dynamics, Calculus (Differential, Integral, Vector), Numerical Methods
- Computational Physics: Numerical simulation of astrophysical phenomena, turbulent plasmas, high-performance computing, CFD acceleration with AI
- Data Science & ML: Python, TensorFlow, NLP, Semantic Search, Vector Embeddings, Sentence Transformers, Data Visualization
- AI & LLM Technologies: Multi-agent orchestration, RAG architectures, prompt engineering, LLM evaluation, OpenAI, Anthropic, AWS Bedrock
- Cloud Platforms: AWS, GCP (Certified Professional Data Engineer), Azure; Kubernetes, BigQuery, VertexAI
- Research: Published author in computational physics, dimensional analysis, Rutherford scattering, solar physics

PROFESSIONAL EXPERIENCE

ADJUNCT PROFESSOR

Politécnico Grancolombiano | Bogotá, Colombia | March 2017 - November 2019

- Delivered lectures to undergraduate engineering students in Newtonian Mechanics, Electromagnetic Physics, Fluids and Thermodynamics
- Taught Differential, Integral, and Vector Calculus courses with focus on practical applications
- Developed and taught Numerical Methods with Python, creating open-source educational repository used by students

- Applied computational methods and simulation techniques to enhance student understanding of theoretical concepts

ADJUNCT PROFESSOR

Universidad Sergio Arboleda | Bogotá, Colombia | July 2012 - May 2018

- Delivered university-level lectures for nearly 6 years across multiple engineering and science disciplines
- Taught Vector Calculus, Differential and Integral Calculus, and Continuous Dynamical Systems
- Instructed courses in Mechanics, Electromagnetic Physics, and Physics of Fluids
- Taught Programming and Computational Tools with MATLAB and Python for engineering applications

DATA SCIENTIST & DATA TEAM MANAGER

Platzi | Bogotá, Colombia | September 2019 - July 2021

- Created educational content for Latin America's largest EdTech platform, reaching 50,000+ students across technical courses
- Architected and deployed first AI-powered feature (Instant Answers) using NLP and vector embeddings for semantic similarity matching
- Developed sentiment analysis system combining sentence embeddings and heuristics for course quality assessment
- Led technical architecture decisions for semantic search engine implementation, improving content discovery
- Managed cross-functional data engineering team, collaborating with backend, DevOps, and frontend architects

Technologies: Python, TensorFlow, Sentence Transformers, Vector Embeddings, AWS, NLP, Semantic Search

CO-FOUNDER & CHIEF TECHNOLOGY OFFICER

Hunty | Bogotá, Colombia | January 2021 - November 2025

- Featured as Google Cloud Success Case for LATAM (Google Cloud Next 2024) for AI-driven recruitment platform
- Led technical evolution from no-code MVP to ISO 27001 certified enterprise platform
- Designed and deployed multi-agent AI systems using OpenAI, Anthropic, and AWS Bedrock, surpassing 10 billion tokens milestone
- Implemented NLP-based recommendation algorithms with vector embeddings for job-candidate matching
- Established comprehensive security strategy achieving ISO 27001 certification with DevSecOps framework

Technologies: AWS, GCP, VertexAI, Azure AI, Python, Kubernetes, MongoDB, BigQuery, Langchain, Langfuse

EDUCATION

MASTER OF SCIENCE IN PHYSICS

Universidade Federal de Minas Gerais | Belo Horizonte, Brazil | 2014 - 2017

- Research Focus: Numerical simulation of astrophysical turbulent plasmas, computational physics
- Expertise in complex systems modeling, high-performance computing, solar physics

BACHELOR OF SCIENCE IN THEORETICAL AND MATHEMATICAL PHYSICS

Universidad Nacional de Colombia | Bogotá, Colombia | 2007 - 2012
- Specialization: Computational physics and physics of fluids

CERTIFICATIONS
- Google Cloud Professional Data Engineer (2019-2021)
- ISO 27001 Information Security Management System - Lead Implementer

PUBLICATIONS
- Camacho, F. et al. "Dimensional analysis and Rutherford scattering." European Journal of Physics, November 2012.
- Camacho, F. et al. "The Richardson's Annular effect and a transient solution of oscillating pressure-driven flow in circular pipes." ResearchGate, July 2012.
- Camacho, F. "Exploring shallow sunspot formation by using implicit Large-eddy simulations." Proceedings of the International Astronomical Union.
- Camacho, F. et al. "La paradoja de Stokes." Revista Colombiana de Física.

ADDITIONAL QUALIFICATIONS
- Public Speaker: Presented AI success case at Google Cloud Next 2024 (LATAM segment) and AWS Re:Invent 2024
- Technical Educator: Platzi courses with 50,000+ students, recognized for educational excellence with multiple teaching milestones
- Published Research: Co-author of academic publications in computational physics and fluid dynamics (European Journal of Physics)
- Open Source: Active GitHub contributor with educational repositories in numerical methods (github.com/pachocamacho1990/MetNum_Py)
- Languages: Spanish (Native), English (Full Professional Proficiency)