



Gabriel Guimarães Carvalho

Research Scientist · Computer Vision · Machine Learning · Ph.D. Physics

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About me

Hi, I'm Gabriel. I am a Brazilian mathematical physicist who enjoys transforming mathematics, scientific computing, computer vision, and artificial intelligence into intuitive tools to understand visual data. I bring international experience, having completed my PhD in Italy and now being based in Belgium, where my career gained momentum. I am deeply interested in the future of computing, particularly quantum technologies, as well as the evolving landscape of generative artificial intelligence.

Education

Università di Roma "La Sapienza" <i>Ph.D. in Physics and Relativistic Astrophysics</i> <i>Thesis: A walk through mathematical physics with disformal transformations and scalar field self-force effects on a particle orbiting a Reissner-Nordström black hole</i>	2014 – 2017 Roma, IT
Universidade Federal de Pernambuco (UFPE) <i>M.Sc. in Mathematics</i> <i>Dissertation (translated): The Ricci Flow and Hamilton's Theorem</i>	2011 – 2013 Recife, BR
Universidade Federal de Pernambuco (UFPE) <i>B.Sc. in Mathematics</i>	2008 – 2010 Recife, BR

Experience

Research Scientist <i>imec</i> Deep Learning · Computer Vision · Modeling and algorithms · R&D in several domains	Jun. 2024 – Present Antwerpen, BE	Postdoctoral Researcher <i>Universidade Federal Rural de Pernambuco (UFRPE)</i> Alternative gravitational theories and geometric methods in Physics	2017 – 2018 Recife, BR
Senior Research Scientist <i>IDLab - UAntwerpen - imec</i> Deep Learning · Computer Vision · R&D	Jan. 2024 – May 2024 Antwerpen, BE	Lecturer <i>Universidade Federal de Pernambuco (UFPE)</i> Calculus I, II, III · Analytic Geometry · Linear Algebra · Complex Variables	Nov. 2017 – Jul. 2019 Recife, BR
Computer Vision Data Scientist/Engineer <i>SpaceTime Labs & Moray</i> Computer Vision · Image Processing · Data Preprocessing/Analysis · Hyperspectral Imaging · GIS	Jul. 2021 – Nov. 2023 São Paulo, BR (Remote)	Lecturer <i>Universidade Federal de Pernambuco (UFPE)</i> Calculus I, II · Analytic Geometry	Apr. 2012 – Jan. 2014 Recife, BR
Ph.D. Researcher <i>Projeto CIn - Motorola</i> Computational Photography · Deep Learning · Data Science/Analysis · Image Processing · Image QA	Sep. 2019 – Jun. 2021 Recife, BR		

Skills

ML/CV: PyTorch, PyTorch Lightning, OpenCV, Scikit-Learn, Scikit-Image, NumPy, SciPy, Pandas
Programming: Proficient: Python. Familiar: Go, Matlab, C++, Java
Geospatial: QGIS, GeoPandas, Rasterio

DevOps: Git, Docker, AWS. Familiar: MLFlow, DVC, Apptainer
OS: Linux, macOS, Windows
Spoken: Portuguese (native), English (C1/C2), Italian (B2/C1), Norwegian (A1/A2)

Certifications

DevOps & Software Engineering (IBM) · Deep Learning (DeepLearning.AI) · Math for ML (Imperial College) · Machine Learning (Stanford) · Advanced CV with TensorFlow (DeepLearning.AI) · Introduction to Quantum Information (KAIST) · Data Engineering (DeepLearning.AI & AWS)



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