europass

Sergio Calo Oliveira

Date of birth: 23/11/1998 | **Nationality:** Spanish | **Gender:** Male |

(+34) 680673787 | sergiocalo.ai@gmail.com | https://ai-intheshell.com/en/ |

https://www.linkedin.com/in/sergio-calo-machine-learning/ |

c/ de la Providencia, 63, 08024, Barcelona, Spain

About me:
I'm graduate in Physics from the university of Santiago de Compostela, where I found my passion for AI. I am currently studying a master's degree in Intelligent Interactive Systems at Pompeu Fabra University, with the focus on machine learning (Computer Vision, Reinforcement Learning and Graph Neural Networks). My field of expertise is computer vision, with several projects carried out to date. In addition, I am collaborating as a neural network developer in a research project on computer cloud dynamics using deep learning and recurrent neural networks. In my personal time I'm also a nature lover and I'm really interested in biology, music and mathematics.

EDUCATION AND TRAINING

09/2021 – 06/2022 – Barcelona, Spain

MIIS | MASTER IN INTELLIGENT INTERACTIVE SYSTEMS – Universitat Pompeu Fabra

The master's programme in Intelligent Interactive Systems focuses on the design, analysis and development of agents and robots able to interact intelligently with humans and other agents, that is, agents that can perceive, plan, act, learn and communicate. The contents cover the fields of artificial intelligence, robotics, machine learning, natural language interaction and web intelligence.

Courses:

- Research Methodology
- Natural Language Interaction
- Machine Learning
- Cognitive Science & Psychology: Mind, Brain and Behaviour
- Autonomous Systems
- Web Intelligence
- Reinforcement Learning
- Artificial Vision
- Advanced Concepts and Methods in Cognitive Systems

Field(s) of study

- Information and Communication Technologies

Thesis: Graph Neural Networks for Large-scale Optimization

https://www.upf.edu/web/iis

01/03/2022 – CURRENT

INTRODUCTION TO RESEARCH GRANTS "JAE INTRO ICU" – CSIC-IIIA

An AI-based recommendation system for “green routes” in sustainable urban environments (JAEIntroICU-2021-IIIA-05)

Mentor: Dr. Filippo Bistaffa (filippo.bistaffa@iiia.csic.es)

1. The main objective of this project is to develop an AI system that recommends “green routes” to citizens that commute (either by foot or by bike) within an urban environment (in this case, Barcelona), by taking into account both the quality of the environment (e.g., reduced levels of emissions, presence of green spaces and parks, etc.) and the minimization of the travel time.
2. More specifically, the project will involve two phases. (1) An initial phase of analysis of the data available on the “Open Data Portal” provided by the Barcelona Administration, including the data collected by the network of sensors monitoring the level of pollutant emissions and quality of the air. (2) Subsequently, the considered problem will be formalized as a multi-objective optimization problem considering a tradeoff between the two above-mentioned criteria.
3. This project belongs to the field named “Computational Sustainability”, which aims at proposing new AI techniques with the objective of achieving better sustainability in various aspects of human society.

Field(s) of study

- Artificial Intelligence

https://www.iiia.csic.es/en-us/

10/09/2016 – 20/07/2020 – Santiago de Compostela, Spain

PHYSICS DEGREE – University of Santiago de Compostela

General:
- Fundamental physics.
- Electronics.
- Materials science.
- Quantum physics.

Specific:
- Computer programming.
- Neural Networks.
- Renewable energy and sustainable development.

Thesis: Deep Convolutional Neural Networks for image classification and its implementation in a web application

EQF level 6

26/02/2021

IELTS ACADEMIC (BAND 7.5) – British Council

DEEPLEARNING.AI TENSORFLOW DEVELOPER SPECIALIZATION – Coursera

15/10/2017 – 15/01/2018 – Santiago de Compostela, Spain

SCIENTIFIC TEXTS EDITION WITH LATEX – University of Santiago de Compostela

03/12/2019 – 26/02/2020 – Santiago de Compostela, Spain

SOUND CREATION COURSE – A Casa do Rock

- Sound landscape.
- Sampling.
- Musical edition and production.
- Improvisation techniques applied to the composition.

23/11/2019 – 24/11/2019 – Santiago de Compostela, Spain
CREATIVE PROGRAMMING WITH PROCESSING – Unitaria escola

Computer programming in Processing (Java based) language, oriented to visuals and art.

02/09/2019 – 06/09/2019 – Santiago de Compostela, Spain
CLIMATE CHANGE: THE FIVE PHASES OF GRIEF – University of Santiago de Compostela

10/02/2017 – 14/05/2017 – Santiago de Compostela, Spain
ASTRONOMY CULTURAL EXTENSION PROGRAM (PECAS 2017) – University of Santiago de Compostela

LANGUAGE SKILLS

Mother tongue(s): **GALICIAN** | **SPANISH**

Other language(s):

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken production	Spoken interaction	
ENGLISH	C1	C1	C1	C1	C1
PORTUGUESE	B2	B2	B1	B1	B1

Levels: A1 and A2: Basic user; B1 and B2: Independent user; C1 and C2: Proficient user

DRIVING LICENCE

Driving Licence: B

PROJECTS

05/2021 – CURRENT
A deep learning method for real-time atmospheric cloud dynamics simulation

Ongoing research in collaboration with professors Carlos Jiménez de Parga and Jose Manuel Cuadra Troncoso, where I design and train recurrent neural networks for real-time cloud dynamics simulation.

Abstract:
Real-time simulation of atmospheric clouds for virtual reality outdoor scenarios has been a research challenge for decades. In this work we present an innovative method for real-time cumulus movement based on a Recurrent Neural Network (RNN) trained with the fluid physics equations of the atmosphere. We applied deep learning techniques for a major knowledge acquisition and improving performance in execution time. After the experiments, we achieved a natural behaviour of cumulus evolution and dissipation with very good performance. This research highlights the convenience of new ontogenetics computational models to achieve an optimum balance between natural realism and performance compared to expensive hyper-realistic fluid dynamics simulations, for the benefit of the natural phenomena simulation, computer games, architectural software and environmental education fields.

COMMUNICATION AND INTERPERSONAL SKILLS

Communication and interpersonal skills

- Good teaching and communication skills gained through my experience as personal maths and science teacher.

VOLUNTEERING

28/08/2019 – 06/09/2019

Cortocircuito International Film Festival

Santiago de Compostela

11/09/2019 – 15/09/2019

Work on Sunday (WOS Music Festival)

Santiago de Compostela
- Avant-garde electronic music festival.