GIANNI TALLARITA

DATA SCIENTIST TORCHIARA, ITALY (RELOCATING TO BARCELONA, SPAIN) +393515506523

DETAILS

Nationality: Italian
gianni2k@gmail.com

Date of birth
18/01/1987

LINKS

Personal Website + Portfolio

LinkedIn

SKILLS

- Python
- Large Language Models (ChatGPT)
- TensorFlow
- GitHub
- Wolfram Language
- Cloud Computing (AWS and Azure)

LANGUAGES

- English (Native Level)
- Spanish (Native Level)
- Italian (Native)

PROFILE

Theoretical physics PhD, Data-Scientist, Machine Learning Engineer with 11 years of experience and over 30 published papers in numerical modeling of large data simulations and quantum field theory. Looking to pivot my career to the private sector to apply my unique set of skills in a real-world scenario.

During the past years as a faculty member of a university physics department, I presented at renowned conferences, supervised small team of researchers, and lectured several mathematics and physics courses including statistics and quantum physics. My research specializes in numerical simulations of dynamical systems that you can find in applications including aerospace engineering, fluid dynamics and weather forecasting. Recently I became passionate about using large language models such as chatGPT.

EMPLOYMENT HISTORY

Associate Professor at Universidad Adolfo Ibáñez, Santiago de Chile

April 2015 — Present

Published over 30 top quartile reviewed papers involving numerical simulations of dynamical systems. Supervised 2 Master Thesis students and a PhD student. Lecturer for hundreds of students per year. Besides the construction and implementation of evolving numerical algorithms (Runge-Kutta, Newton-Rhapson and Pseudo-spectral methods), this involves gathering large sets of structured and relational data from databases using SQL, and data analysis with Python libraries (numpy, pandas). Creating versions and sharing the code with a team using GitHub.

Built an AMR neural network partial differential equation solver; presented in an online review with over 1500 views (link).

Presented my research at several international conferences and seminars, won "Best Young Researcher" prize twice and raised over 200k USD in research funding.

PostDoctoral Researcher at Centro Estudios Cientificos (CECs), Valdivia

October 2013 — April 2015

Published numerous papers in String theory. Implemented numerical algorithms using Python and Wolfram languages from large data sets with MySQL. Implemented adaptive mesh refinement techniques using neural networks.

PostDoctoral Researcher at Universidad Nacional de La Plata, La Plata

April 2012 — April 2013

Worked on numerical simulations of soliton theory. This involves dynamical systems with large data sets and efficient coding to simulate soliton scattering events. Presented my research at several seminars and conferences world-wide.

Summer Intern at Bank of America, London

June 2008 — September 2008

Implemented the automatic startup system check of all bank systems using shell prompts. Worked as part of the technology team division.

Systems Engineer at UltraElectronics, Cambridge

June 2006 — September 2006

Developed the accelerometer system of anti-noise systems on commercial airplanes along with the systems engineering team.

EDUCATION

PhD, Queen Mary University of London, London, UK

October 2008 — January 2012

Published 6 papers during my PhD. Attended international schools at CERN. My work focused on numerical simulations of soliton scatterings and holography, using computer programming to model dynamical systems involving large clusters of numerical data.

Masters of Mathematics: CASM, Cambridge University, Cambridge, UK

2008 — 2009

Part III of the Mathematical Tripos at Cambridge University. Awarded the Certificate of Advanced Studies in Mathematics (CASM).

Masters of Arts: Natural Sciences, University of Cambridge, Cambridge, UK

March 2004 — September 2008

Masters Degree in the Natural Sciences Tripos at Cambridge University, specializing in theoretical physics and mathematics.

Masters in Data Science, Universidad Adolfo Ibáñez, Santiago, Chile

March 2023 — Present

Currently undertaking a Masters in Data Science. Courses involve Advanced Python programming, SQL, cloud computing and Statistics.

OTHER PROGRAMMING EXPERTISE

Data-Bricks Large Language Model (LLM) certification, 2023 (certificate link)

Azure ML Data-Science associate certification, 2022 (certificate link)

AWS Cloud practitioner certification, 2022 (certificate link)

SQL for Databases

Relational databases using MySQL

Python Language

Statistical analysis using sci-kit libraries, numpy, pandas for data analysis. Neural network implementations using Tensorflow and Pytorch. Large language models using open source libraries from HuggingFace. Experienced in using Machine Learning for advanced problems using regression, clustering, random forests and deep neural networks.

Using Tensorflow I built a lip reading program that creates texts from videos (link). I programmed my own financial robo-advisor using Chilean consumer data and Machine learning algorithms (link). I also made my own, open-source version of a pandas dataframe csv reading agent using a pretrained LLM model from HuggingFace (link).

Wolfram Language

Expert in Wolfram language, attended two Wolfram Summer schools.

BOOK PUBLICATIONS AND COLLABORATIONS

Branes, Tachyons and String Theory (link)

LAP LAMBERT Academic Publishing (December 9, 2011)

Chapter in Advanced Topics in Quantum Field Theory (link)

Cambridge University Press (2022-2023)