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Filippo Ziliotto

Website, Portfolio, Profiles

- https://ziliottofilippodev.github.io
- https://www.linkedin.com/in/ziliottofilippodev/
- https://github.com/ZiliottoFilippoDev

Summary

Physicist specialized in the field of data science. Searching for an entry level job as a Data scientist or Machine learning engineer. Strong analytical skills and profoud knowledge of Computer Vision and relative frameworks (OpenCV, Pytorch, Tensorflow). Currently working as a software engineer in the particle physics field.

Skills

- Machine/deep learning
- Object-Oriented Programming (OOP)
- Source and Version Control: Git, GitHub
- Programming Languages: C++, Python, R, Excel, VHDL, SQL, Julia
- OpenCV, PyTorch, TensorFlow
- Deep Knowledge in Statistics/Physics
- Presentation & Communication
- Self-Motivated
- Eagerness to Learn New Technologies

Experience

SOFTWARE ENGINEER 04/2022 - 11/2022
CERN, Meyrin, Switzerland

Development of python software tool used for collimation system in LHC accelerator
Analysis of lossmaps in order to avoid magnet quenching.

PACKAGE DEVELOPER 06/2021 - Current
Dipartimento di Scienze Statistiche, Padova, Italy

R CRAN library for innovtion-diffusion models and applications (DIMORA package). Collaboration with department of statistics (University of Padua).
Written for *Guidolin, M. (2023). Innovation Diffusion Models: Theory and Practice, First Edition. John Wiley & Sons Ltd.*
Cited by Rob Hyndman in *"CRAN Task View: Time Series Analysis"*

Projects

- **Deep Posture multitasking Recognition** in Smart Beds with Deep Multitask Learning: Research paper, studying and outperforming state of the art models in the classification of both subjects and

17 different in-bed postures, using a dataset made up of pressure maps with a smart bed. The proposed model is built from scratch implementing a simplified version of the GoogleNet, that makes use of stacked inception blocks. (Project on GitHub)

- **Self-Supervised Image Colorization** through Segmentation Networks: Research paper, implementing Image colorization with standard CNN's (Resnet) adding the information given by segmentation networks to apply different weights. The goal is to take a grayscale image as input and attempt to produce a coloring scheme. (Project on GitHub).
- **Neural Visual Stimuli Reconstruction** using kinetic Ising model: Programming and reconstructing the response of real brain signals of Zebra fish through the maximization of a log-likelihood. Then, scaling through Python the project to thousand of neurons and understand the relative importance of each one. (Project on GitHub)
- **Unsupervised Learning on Binary Protein Datasets**: Measuring performances of different clustering algorithms and techniques on high and low-dimensional binary protein datasets. Discussing and comparing the different results.
- **Deep Q-network with Gym**: Training of a reinforcement learning agent to solve the *CartPole* and *LunarLander* games with the Gym Environment. This was done using a deep-Q network constructed in Pytorch, differentiating the results for softmax and epsilon-greedy policies.
- **FPGA Fir-Filter from scratch**: Designing of a low-Pass FIR filter both in VHDL and python to compare the results by a frequency analysis. The low-Pass FIR filter chose has 4 "taps" behavior in the frequency domain. Then, first testebenched via GTKwave software and after implemented with VHDL in a real FPGA.

Education

Master of Science, Physics of Data, Expected in 05/2023
Università Degli Studi Di Padova, Padova
Interdisciplinary degree between physics and data science.

Bachelor's degree, Physics, 07/2020
Università Degli Studi Di Padova, Padova

Certifications

- SQL for Data Science - Coursera
- Julia for Data Science - LinkedIn
- Advanced NLP with Python - NASBA

Languages

Italian: First Language

Italian: C2
Proficient

English: C1
Advanced

French: A2
Elementary