Giovanni Pagliarini

+39 346 97 32 586 | giovanni.pagliarini@aol.com | giopaglia.github.io | giovanni-pagliarini

Briefly

I have cultivated the passions for computer science and music since the age of 5. I have a training as a computer scientist, acquired between universities in Italy, Sweden and Singapore. Now, in the context of a PhD, I am specializing in Machine Learning, participating to different projects in parallel, and acquiring a more comprehensive approach to design thinking. Recently, following my need to give a broader sense to my profession, I am approaching the world of green entrepreneurship.

Education

PhD in Computer Science and Mathematics

Ferrara, Italy

University of Parma

11/2020 – Present

- Topics: interpretable machine learning, computer vision, time series classification, data science, efficient and parallel computing
- My main research line aims at the formalization of *modal symbolic learning*, a novel methodology for obtaining *interpretable* intelligent models for computer vision and spatial/temporal pattern recognition
- I'm working on various projects for testing the effectiveness of new machine learning methods: COVID-19 diagnosis from cough/breath sounds; EEG signal interpretation; gas turbine trip prevention; land cover classification from satellite imagery

Master Degree in Computer Science

Gothenburg, Sweden

University of Gothenburg

08/2018 – 06/2020

- ECTS: 120, Grade: G
- Topics: machine learning, computer vision, bioinformatics, discrete optimization, logic, compilers
- Thesis: *Interactionwise – Semantic Awareness for Visual Relationship Detection*
- I enrolled into an student exchange program (6 months), which took me to the *National University of Singapore (NUS)*, where I deepend my knowledge on computer vision

Bachelor Degree in Computer Science

Ferrara, Italy

University of Ferrara

09/2015 – 07/2018

- ECTS: 180, Grade: 110/110 with honors
- Topics: algorithms, computability and complexity theory, parallel computing, computer architecture, operating systems
- Thesis: *Optimization of Lattice Boltzmann simulations for Intel Xeon Phi 'Knights Landing'*

Experience

Findwise AB

Gothenburg, Sweden

Machine Learning Developer – Master Thesis work

01/2020 – 06/2020

- I tackled a problem of detection of interactions between objects in digital images (*Visual Relationship Detection*)
- I made extensive use of machine learning techniques for computer vision and natural language processing (NLP)

University of Gothenburg

Gothenburg, Sweden

Teaching Assistant (course: *Algorithms I*)

01/2020 – 03/2020

- I graded home assignments and held a few excercise sessions

University of Ferrara

Ferrara, Italy

Research Trainee – Bachelor Thesis work

09/2017 – 06/2018

- I optimized a C code for fluid dynamics simulations, targeting highly-parallel architectures
- I measured performance of different data layouts and memory access patterns

Mercato delle Terre Estensi

Ferrara, Italy

IT Technician

01/2016 – 08/2018

- I Built a website and a management/billing system in HTML/PHP/CSS/Javascript

Technical skills

Machine learning	pytorch, computer vision, natural language processing
OS & task automation	Linux programming, UNIX shell, data processing & cleaning
Functional	Julia, Haskell
Object-oriented	C++, Java, Python
Low-level	C (parallel computing with MPI, OpenMP, pthread, CUDA), LLVM
Full-stack	MySQL, PHP, Javascript
Other	LaTeX, Matlab, R, Go (basic knowledge), Linear programming

Relevant projects

Modal Decision Trees in Julia — *University of Ferrara*, *2021*

Framework for interpretable classification of data with dimensional components, such as audio recordings, images, videos, and EEG signals. Presented at JuliaCon2022.

Transparent COVID–19 diagnosis from audio samples of breath and cough — *University of Ferrara*, *2020*

Modal decision trees allow the extraction of knowledge in *explicit* form, able to explain the relation between vocal patterns in cough/breath samples and the presence of COVID-19 in a human subject.

Pitòn - Rule extraction from MySQL databases — *University of Ferrara*, *2020*

Laravel Package (PHP) for training rule-based classification models from data stored in MySQL databases.

Class Semantic Awareness for neural networks — *University of Gothenburg*, *2020*

Attempt at improving the standard softmax-based classification framework for neural networks.

Dimensionality reduction: a performance comparison of PCA, LDA and FJLT — *National University of Singapore*, *2019*

EasyG – Classifying Electrocardiograms using deep learning — *University of Gothenburg*, *2019*

Languages

Italian	Native speaker
English	IELTS Academic score: 7.0

Personal interests

Learning	Touch typing, ergonomics, codes, languages
Music	Arrangement, Professional studies of jazz guitar and piano
Entertainment	Video-editing, improv
Sport	Climbing, table tennis

Honors & awards

2022 **Winner**, MAGICA Summer School, Acceleration Programme

2021 **Finalist**, Huawei Italy University Challenge

Participant, Talents for Open Innovation

TV & news appearance, Focus on a Research work I conducted on TV program “Oggi è un Altro Giorno”

Personal Data

In compliance with the GDPR and Italian Legislative Decree no. 196 dated 30/06/2003, I hereby authorize the recipient of this document to use and process my personal details for the purpose of recruiting and selecting staff and I confirm to be informed of my rights in accordance to art. 7 of the above mentioned decree.