DARIO BERTAZIOLI

CURRICULUM VITAE

dal 1994 Consorzio Interuniversitario AlmaLaurea
Un ponte fra Università e mondo del lavoro e delle professioni

Born / **01/09/1995** Age / **25**
Place of birth / **SARONNO (VA)**
Nationality/ citizenship / **Italy**
Via toniolo, 20020 SOLARO (MI)
Driving licence / **B** / **Car available**
ID / **4470894** updated on **27/02/21**

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SOFT SKILL

Autonomy 9/10
Self confidence 9/10
Flexibility/Adaptability 9/10
Resistance to stress 8/10
Ability to plan and organize 8/10
Managing information 8/10
Precision/Attention to details 9/10
Learn continuously 10/10
Achievement of objectives 9/10
Entrepreneurial spirit and initiative 9/10
Communication 8/10
Problem Solving 9/10
Team work 8/10
Leadership 7/10

FOREIGN LANGUAGE SKILLS

europass

MOTHER TONGUE(S): **Italian**

ENGLISH	C1	C1	C1	C1	C1
EXCELLENT					

DIGITAL COMPETENCES

Self-assessment grid europass
Information processing Proficient user
Communication Proficient user
Content creation Independent user
Safety Proficient user
Problem solving Proficient user

EXPECTATIONS AND FEATURES OF THE DESIRED JOB

INTENTION TO CONTINUE STUDIES: **Yes** / Doctoral studies

ECONOMIC SECTOR: **1.** computer science, data processing and acquisition / **2.** education, training, research and development / **3.** credit and insurance

CAREER FIELD: **1.** R&D and patents / **2.** Finance / **3.** Organization

DESIRED JOB: **Data Scientist**

PREFERRED DISTRICT TO WORK IN: **1. MILANO**

Career Goal

Bachelor's in Physics, with a Theoretical and Computational thesis on quasicrystals and their (low) frictional properties (we simulated an amazing free-sliding quasicrystal system with zero (zero!) static friction between contacts).
Master's in Data Science with a thesis on Deep Learning-based diagnostic system tested on COVID and neurodegenerative diseases. My background enables me to exploit my deep mathematical knowledge and modelling skill. Strongly interested in Machine Learning and A.I.

WORK EXPERIENCES

Research Fellow
UNIVERSITÀ DEGLI STUDI DI MILANO-BICOCCA
Education, training, research and development
MILANO (MI)
12/2020 - TODAY

Main activities and responsibilities: Research fellowship at the Computer Science Department @ Unimib.
- Biomedical Applications of DeepLearning. Final Goal: provide biomed scientists with a fully automatic pipeline for an end-to-end diagnosis/screening method based on deep learning interpretation of the Raman Spectral data.
- Supervising Students' Biomedical Projects @ Advanced Machine Learning Course.
| Company sector: R&D and patents

ML Researcher
STEALTH-MODE A.I. STARTUP
Education, training, research and development
LOS ANGELES (CA) (UNITED STATES OF AMERICA)
10/2020 - TODAY

Main activities and responsibilities: Perform experimental research related to the latest applications of Deep Learning-based Architectures in the Computer Vision area, such as image/video editing and manipulation.
Main interests:
- deep fake for movie industry
- image super-resolution, and how to deal with the highest frequency components (i.e. details) of images.
| Company sector: R&D and patents

Research Intern
FONDAZIONE DON GNOCCHI
Biomedicale
(MI)
10/2019 - 03/2020

Main activities and responsibilities: Collaborative project between Fondazione Don Gnocchi and the University of Milano-Bicocca, to study and implement machine learning and deep learning algorithms for the analysis of Raman spectroscopy data from saliva samples.
I investigated and validated state of the art approaches for the Raman spectral analysis to identify particular biomarkers potentially associated with the onset of the development of ALS and other neurodegenerative diseases.
Employed as: intern/trainee - undergraduate internship | Company sector: R&D and patents

Private Tutor
SUPERPROF.COM
Education, training, research and development
(MI)
01/2015 - 10/2019

Main activities and responsibilities: Teaching as a private Tutor, courses and private lessons in General Mathematics, Calculus and Physics for highschool and university (undergraduate) students.
Acquired skills and achieved objectives: During this experience, I was able to ameliorate my communicative and planning skills.
Working as: other, self employed

Volonteer/Organizer
OPERAZIONE MATO GROSSO
SARONNO (VA)
01/2011 - 01/2016

Main activities and responsibilities: As a volunteer and organizer of the Operazione Mato Grosso Movement (O.M.G.), I coordinated the work-plan of the volunteers belonging to the group localized in Saronno (Va, Italy), organizing the daily activities during which we performed various jobs/tasks provided by private citizens as well as statal entities. The payoff of those activities was (and still is) devolved to the Humanitarian Missions of such an Organization, mostly located in South America.

AVAILABILITY FOR BUSINESS TRAVELS:
Yes, including relocation

AVAILABILITY TO RELOCATE ABROAD:
Yes, even in non-European countries

Acquired skills and achieved objectives: This experience left me with a good and proven teamwork skill!
Volunteer activities

other information

Currently employed: Yes
Voluntary service: Yes
Work experience made during studies: Yes

ACADEMIC STUDIES

MASTER'S DEGREE
2018 - 2020

Università degli Studi di MILANO-BICOCCA
Dipartimento di Informatica, Sistemistica e Comunicazione
Corso di laurea magistrale in data science
specific field of the degree course: deep learning
LM-91 - 2nd level degree in Technologies and methods for the information society

Dissertation/thesis title: Decoding Raman Spectroscopy Towards the Diagnosis of SARS-COV-2 Infection and other Diseases | Dissertation/thesis subject: Deep Learning | Thesis supervisor: V. Messina, C. Carlomagno | Dissertation/thesis keywords: Deep Learning, COVID, diagnosis, pipeline

Age at graduation: 25 | Official duration: 2 years
Final degree mark: **110/110 cum laude**
Graduation date: 30/11/2020

BACHELOR'S DEGREE
2014 - 2018
CERTIFIED TITLE

Università degli Studi di MILANO
Facoltà di Scienze e Tecnologie
Fisica
L-30 - 1st level degree in Physics

Dissertation/thesis title: STRUCTURE, ENERGETICS AND DYNAMICAL PROPERTIES OF A COLLOIDAL MONOLAYER ON A QUASIPERIODIC POTENTIAL SUBSTRATE | Dissertation/thesis subject: Structure of Matter | Thesis supervisor: MANINI NICOLA | Dissertation/thesis keywords: Aubry, Annealing, Quasicristals, Colloids, Pinning/Depinning

Age at graduation: 23 | Official duration: 3 years
Final degree mark: **107/110**
Graduation date: 14/12/2018

SCIENTIFIC CERTIFICATE
SARONNO
2014

Scientific High School
G. B. GRASSI , SARONNO (VA)
Kind of secondary school diploma: Italian secondary school diploma
Kind of secondary school attended: Public school

OTHER POSTGRADUATE STUDIES

TRAINING COURSE
2021

Mediterranean Machine Learning school
Unimib & DeepMind
Selected to attend the one-week full-immersion machine learning Winter school (https://www.m2lschool.org/home) on topics such as Computer vision, Natural Language Processing, Generative models, Meta/Multitask learning, Graphnet, (Deep) reinforcement learning, Bayesian and causal inference.
My poster presentation about 'Decoding Raman Spectroscopy Towards the Diagnosis of SARS-COV-2 Infection and Other Diseases' was also accepted.
My certificate of attendance:
https://github.com/DBertazioli/host/blob/master/cert/m2l_certificate.pdf

TRAINING COURSE
2020

6th International Winter School on Big Data
BigDat 2020 - IRDTA
Research training event where renowned academics and industry pioneers had lectured and shared their views. Most big data subareas have been displayed, namely foundations, infrastructure,

management, search and mining, security and privacy, and applications (to biological and health sciences, to business, finance and transportation, to online social networks, etc.).
My certificate of attendance:
https://github.com/DBertazioli/host/blob/master/cert/bigdat.pdf

TRAINING COURSE
2019

3rd International Summer School on Deep Learning
DeepLearn2019
(Poland)
Research training event (one full-immersion week) about the most recent advances in the area of deep learning. The school covered a spectrum of exciting machine learning research and industrial innovation dealing with large-scale data in neurosciences, computer vision, speech recognition, language processing, drug discovery, biomedical informatics, healthcare, recommender systems, learning theory, etc.
My certificate of attendance:
https://github.com/DBertazioli/host/blob/master/cert/deep_learning.pdf

FOREIGN LANGUAGE SKILLS

DIPLOMAS AND CERTIFICATES

English Advanced English (C1 level) Intensive Course Certificate, International House World Organisation, Hofstra University (NYC), 05 Aug 2013

INFORMATION TECHNOLOGY SKILLS

APPLICATION SOFTWARE

Data Manipulation: Pandas, Numpy, parallelization with Ray (and openMP/pymp-pypi entry-level) , ML and DL frameworks: Sklearn, Pytorch&Lightning, Tensorflow&Keras | **Data Visualization:** Tableau, Matplotlib, Seaborn, Plotly, Folium, Dash, Streamlit, GNUplot | **Statistical analisys:** Python Libraries: Scipy, Statsmodel. Others: SAS, KNIME/WEKA (entry-level)

COMPUTER PROGRAMMING

Markup languages: LaTeX, Markdown, Rmd (Advanced) | **Programming languages:** Python (advanced), R Bash C++ (intermediate), Fortran (Entry-level), QuakeC | **Web Programming:** HTML-CSS-Js (Foundation)

SYSTEMS AND NETWORKS MANAGEMENT

Operating systems: (Advanced) , Unix

DATA MANAGEMENT

DBMS: SQL-based, NoSQL (MongoDB, Neo4j, ArangoDB) (Intermediate) | **Query languages:** SQL, Cypher, AQL

ICT CERTIFICATES

Docker Essentials: A Developer Introduction CognitiveClass.ai (an IBM Project), 2019
DeepLearning Badge IBM, 2019
Deep Learning Fundamentals CognitiveClass.ai (an IBM Project), 2019
Accelerating Deep Learning with GPU CognitiveClass.ai (an IBM Project), 2019
Deep Learning with TensorFlow CognitiveClass.ai (an IBM Project), 2019

STUDIES AND EXPERIENCES ABROAD

UNITED STATES OF AMERICA
2013

Personal initiative (Language Study Stage NYC)
Place: **New York (United States of America)** | Language: English | Duration: 1 (months)

IRELAND
2011

Personal initiative (Language Study Stage Dublino)
Place: **Dublino (Ireland)** | Language: English | Duration: 1 (months)

PROFESSIONAL ACCOLADES AND AWARDS

AWARD / SCOLARSHIP
01/05/2019

Borsa di studio (Merit scholarship) iussed by Fondazione Tronchetti provera
Merit Scholarship funded by Fondazione Tronchetti Provera for the DataScience course @Unimib
Grading in list: 1

PUBLICATIONS

JOURNAL ARTICLES
2021

C. Carlomagno, D. Bertazioli, A. Gualerzi, S. Picciolini, P. I. Banfi, A. Lax, E. Messina, J. Navarro, L. Bianchi, A. Caronni, F. Marenco, S. Monteleone, C. Arienti, M. Bedoni., COVID-19 salivary Raman fingerprint: innovative approach for the detection of current and past SARS-CoV-2 infections
Review: Scientific Reports
Publisher: Nature
Raman-based approach for the analysis of saliva, able to significantly discriminate the signal of patients with a current infection by COVID-19 from healthy subjects and/or subjects with past infection. The Raman-based classification model was able to accurately discriminate the signal collected from COVID-19 patients. These findings have implications for the creation of a potential Raman-based diagnostic tool using saliva as a minimally invasive and highly informative biofluid.
10.1038/s41598-021-84565-3

MASTER'S DEGREE DISSERTATION
2020

Dario Bertazioli, Decoding Raman Spectroscopy Towards the Diagnosis of SARS-COV-2 Infection and Other Diseases.
Institution: University of Milano-Bicocca
Raman Spectroscopy promises the ability to encode in spectral data the significant differences between saliva samples belonging to disease-affected and healthy individuals.
Based on this assumption, we developed an efficient and non-invasive method for pathology screening based on Deep Learning.
The proposed pipeline has been successfully tested for the screening of SARS-COV-2 Infection, and neurodegenerative diseases such as Amyotrophic Lateral Sclerosis, Alzheimer, and Parkinson disease.

DEGREE THESIS
2018

Dario Bertazioli, Structure, Energetics, and Dynamic Properties of a Colloidal Monolayer on a Quasiperiodic Potential Substrate
Institution: Università degli studi di Milano
We investigate the static and dynamic properties of a monolayer of mutually repulsive colloidal particles interacting with an externally imposed quasiperiodic corrugation potential. Using classical molecular dynamics we simulate an annealing process in order to generate a minimum total-energy configuration. We study its static and dynamic properties, investigating the pinned-unpinned Aubry-type transition.
materia.fisica.unimi.it/manini/theses/bertazioli.pdf