

Andrea Mezzalira

PHD IN THEORETICAL PHYSICS · DATA SCIENTIST

Alessandria Area, ITALY

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Five-years professional experience in mathematical modeling and data wrangling, with 12 papers published by international, peer-reviewed journals. Cloudera certified Analyst (CCA), I use to code with machine learning purposes mostly in Python, Mathematica and PL/SQL. I tend to use Regex enthusiastically whenever possible.

IT-Skills

Programming: Python (Pandas, Scikit Learn, Keras, Sympy) | C | Mathematica | KNIME platform

Big Data tools: HDFS | Impala | Hive | Flume | Kafka | HUE

Database: Oracle | MySql | PL/SQL dialect

Experience

University of Eastern Piedmont

EXTERNAL PROFESSOR

Alessandria Area, Italy

Jan. 2018 - Present

- Lecturer for the Chemistry course “Electromagnetism and Optics”.

Liceo “Giuseppe Peano” (Tortona) and ISS “Barletti” (Ovada)

MATHEMATICS AND PHYSICS TEACHER

Alessandria Area, Italy

Sep. 2017 - Present

- Lectures are partially given in English under the “Content and Language Integrated Learning” (CLIL) program.
- European project Management: responsible of scientific contents, preparation of the application packages for “PON” programs.
- Organisation of computer science courses for senior students, using a multidisciplinary approach: starting from the analysis of scientific experiments, the students learn to basics of some programming languages (python, \LaTeX).

Miriade S.p.A.

CONSULTANT DATA SCIENTIST & DATA ANALYST

Vicenza Area, Italy

Sep. 2016 - Sep. 2017

- Working in team to design on-demand data science projects with before-cleaning datasets larger than 100GB on average. Mainly used machine learning algorithms include: Ridge and Lasso regression, K-Means clustering and Latent Dirichlet allocation.
- Among the projects, the forecasting of parking lots occupancy (20 parking lots, ~ 3000 total parking spots and five-years transactions dataset) using ensemble methods.
- Using Big Data tools (above all: Flume, Kafka and Impala) to parse and analyse multi-source, real-time log streaming ($\sim 50\text{KB/sec.}$).

CONSULTANT DATABASE ADMINISTRATOR

Jan. 2016 - Sep. 2017

- Installing, tuning and managing Database software (mainly Oracle and Postgres).
- First and second level customer service ticketing. Among the activities, database migration, query tuning and disaster recovery.
- Lecturer for databases courses dedicated to customers.

University of Leiden, Instituut-Lorentz for Theoretical Physics

Leiden, the Netherlands

POSTDOCTORAL RESEARCH FELLOW

Jan. 2015 - Feb. 2016

- Developing mathematical models, using String theory framework and semi-numeric PDEs techniques (shooting methods), to investigate unexplained universal behaviour of a class of phase transitions in electron systems.
- Spending a nine-months period visiting and collaborating with Trinity College Dublin, School of Mathematics.

Université Libre de Bruxelles (ULB)

Bruxelles, Belgium

POSTDOCTORAL RESEARCH FELLOW - GROUP DE PHYSIQUE MATHÉMATIQUE DES INTERACTIONS FONDAMENTALES

May. 2013 - Dec. 2014

- Working in a scientists consortium aimed to modelize many-body systems in the on-the-edge String theory framework. By developing a recursive algorithm to solve PDEs semi-numerically, I improved by 10x the precision of the results.

University of Eastern Piedmont

INTERN

Alessandria Area, Italy

Jan. 2009 - Sep. 2009

- Working to extend and publish my master thesis.

CERN

INTERN - ALICE EXPERIMENT GROUP

- Building virtual control panels for Alice Silicon Pixel Detector (SPD); testing multiple detector's components.

Geneva, Switzerland

Summer 2006

Philipps-Universität Marburg

INTERN - DEPARTMENT OF CHEMISTRY - COMPUTER SIMULATION GROUP

- Implementing a C++ code (based on Monte Carlo method) to simulate particles in nanotubes.

Marburg, Germany

Summer 2005

Education

University of Turin

PHD IN THEORETICAL PHYSICS

- Defense on 26th March 2013; thesis title *Fermionic Variations on AdS/CFT Themes*
- Spending a two-months period working at the Ecole Normale Supérieure in Paris.

Turin, Italy

2010 - 2013

University of Turin

M.Sc. IN THEORETICAL PHYSICS

- Italian Title Degree: *Laurea Specialistica in Fisica delle Interazioni Fondamentali*.
- Score: 110/110 cum Laude.

Turin, Italy

2006-2008

University of Eastern Piedmont

BACHELOR DEGREE

- Italian Title Degree: *Laurea Triennale in Fisica*.
- Score: 110/110 cum Laude.

Alessandria, Italy

2003-2006

Certifications

Coursera, Deep Learning Specialization

IMPROVING DEEP NEURAL NETWORKS: HYPERPARAMETER TUNING, REGULARIZATION AND OPTIMIZATION

- License YBFZKUCVF8VA

Jan. 2018

Coursera, Deep Learning Specialization

STRUCTURING MACHINE LEARNING PROJECTS

- License QPFVNN5WQMFY

Jan. 2018

Coursera, Deep Learning Specialization

CONVOLUTIONAL NEURAL NETWORKS

- License Q38A7FK6S3BZ

Dec. 2017

Coursera, Deep Learning Specialization

NEURAL NETWORKS AND DEEP LEARNING

- License P83C3SB4YTBC

Dec. 2017

Cloudera

CLOUDERA DATA ANALYST (CCA)

Aug. 2017