Andrea **Mezzalira**

PhD in Theoretical Physics · Data Analyst

Alessandria Area, ITALY

 at request | ✉ mezzalira.andrea@gmail.com | amezzali.github.io | mezzalira-andrea

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

Liceo "Giuseppe Peano" (Tortona) and ISS "Barletti" (Ovada)
Alessandria Area, Italy

Mathematics and Physics Teacher
Sep. 2017 - Present

- Lectures are partially given in English under the "Content and Language Integrated Learning" (CLIL) program.

Miriade S.p.A.
Vicenza Area, Italy

Consultant Data Analyst & Database Administrator
Jan. 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, $\sim$ 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 ($\sim$ 50KB/sec.).

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 Interations 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.

CERN
Geneva, Switzerland

Intern - Alice experiment group
Summer 2006

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

Philipps-Universität Marburg
Marburg, Germany

Intern - Department of Chemistry - Computer Simulation Group
Summer 2005

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

Education and Certifications

Cloudera

Cloudera Data Analyst (CCA)
Aug. 2017

University of Turin
Turin, Italy

PhD in Theoretical Physics
2010 - 2013