Andrea **Mezzalira**

PhD in Theoretical Physics · Data Analyst

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

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, ∼ 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 (∼ 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*