Tommaso Colombo

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Education

- **PhD candidate in Operations Research – University of Rome "La Sapienza"**
  November 2016 – ongoing
    - **Works in progress**:
        - Linesearch techniques for the Stochastic Gradient Descent algorithm
        - A convergent dynamic batching strategy for the nonconvex finite-sums problem
        - Distributed algorithms for convex problems with linear coupling constraints
    - **Applications:**
        - Supervised and unsupervised learning machines applied to healthcare (e.g., postural diseases detection)
        - Deep learning for energy time series forecasting
        - Deep learning for image processing – defects detection in quality control
    - **Assistant** for the course of **Optimization Methods for Machine Learning**
    - **Advanced courses**:
        - Advanced Course on Data Science & Machine Learning (ACDL 2018 – Siena)
        - Optimization and Big Data summer school (OBA 2017 – Veroli)
        - Spring School on Optimization and Data Science (Novi Sad 2017)
        - Stochastic Optimization (full course)
        - Parallel computing for Optimization

- **Publication on IJCNN** (International Joint Conference on Neural Networks)
  2015
  'Maximum Length Weighted Nearest Neighbor Approach for Electricity Load Forecasting': new approach for time series forecasting, which combines prediction based on sequence similarity (KNN) with global optimization techniques

- **Master's Degree in Operations Research – Università degli Studi di Roma La Sapienza**
  Curriculum: "Tecniche decisionali e data mining"
  October 2012 – October 2014
    - Grade **110/110 with honors**
    - **Excellence Program**, thanks to an average grade of 30/30 (1st percentile)
    - **Thesis in Australia**, as a collaboration **with the University of Sydney**, from May to August 2014: 'A machine learning approach to electricity load and prices forecasting'
    - **Scholarship 'Antonio Ventura'**, issued by Fondazione Roma Sapienza for thesis abroad

- **Bachelor's Degree in Management Engineering – Università degli Studi di Roma La Sapienza**
  October 2009 – July 2012
    - Grade **110/110 with honors** – 1st percentile by grade
    - **Scholarship**, thanks to an **average grade of 29.5/30**, every year, issued by the university
    - **Erasmus semester at 'MCI Management Center Innsbruck'**, Austria, for 6 months

Qualification to practice Information Engineering profession
November 2014

Working experience

- **Senior Data Scientist** at **ACT Operations Research**
  June 2016 – ongoing
    - Quality control through Deep Learning-based automatic defects detection for a leading apparel manufacturer (Oct '18 – ongoing)
    - Demand forecast and stores replenishment for the biggest Italian mass retailer (May '18 – ongoing)
    - Supervised and unsupervised learning for a large European public transportation company (Feb '17 – ongoing)
    - Demand forecast and stores replenishment for a global leading food distribution company (Oct '16 – ongoing)
    - Demand forecast using neural networks and statistical models for a large Italian retailer (Aug '16 – ongoing)
    - Demand forecast through neural networks and inventory simulation for a large tech player in the US (Jul '16 – Dec '16)
    - Clustering analysis for a global leader in road infrastructures (Jun '16 – Dec '16)
    - Pricing optimization for a global leader in the car rental industry (Jul '16 – Feb '17)

- **Business Analyst** at **McKinsey & Company**
  November 2014 – May 2016
    - Research study on "Connected cars" and autonomous driving: how to monetize car big data (Mar '16 – Jun '16)
    - Pricing optimization and revenue management for a large international retailer – experience with data manipulation and visualization (Dec '15 – Feb '16)
    - Strategic Plan and Portfolio Strategy for a major specialty retailer (Oct '15 – Dec '15)
    - Digital Marketing & Transformation and Strategy for a major Telecom operator (Mar '15 – Sep '15)
    - Supply Chain Management optimization for a global leading A & D player (Nov '14 – Feb '15)

Computing Skills

- Advanced knowledge of Office
- Good programming skills in Java, Python, Matlab and Google's Tensorflow (machine learning/ statistical/ optimization models and self-developed algorithms implementation)
- Knowledge of Structured Query Language and working application with Oracle SQL Developer, MySQL and Access

Linguistic skills

Fluent in English (TOEFL score: 106/ 120), basic German

Other information

- From 2008 to 2014 I worked as a deliverer for a restaurant
- From 2009 to 2014 I gave private lessons of mathematical analysis and operations research to university students, mathematics, physics, chemistry and English to high school students
- Since 2003 I have been playing volleyball in a professional team (currently in C series)