Alberto **Guffanti**
APPLIED DATA SCIENCE AND MACHINE LEARNING RESEARCHER

Work Experience

Università degli Studi di Torino - Dipartimento di Informatica
Torino, Italy

RESEARCHER (ASSEGNISTA DI RICERCA)
Mar. 2019 - PRESENT

- Research activity focused on: applications of Graph Neural Networks, Machine Learning Methods for geospatial data, applications or Reinforcement Learning, applications of Blockchain technology.
- Project Manager for the European Commission H2020 project *"CO3 - Digital Disruptive Technologies to Co-create, Co-produce and Co-manage Open Public Services along with Citizens"*.

Self-employed
Torino, Italy

FREELANCE DATA SCIENTIST & MACHINE LEARNING RESEARCHER
Feb. 2019 - PRESENT

- Development of predictive maintenance algorithm for industrial IoT applications (time-series analysis using deep neural network models, fault detection and classification algorithms, physics-based modelling of data).
- Implementation of data analysis and visualization dashboards for monitoring advertising campaigns on the Amazon platform.

Electron
London, UK

SENIOR DEVELOPER - BLOCKCHAIN, MACHINE LEARNING & DATA SCIENCE
Sep. 2017 - Jan. 2019

- Played a central role in the development of an innovative, blockchain-based trading platform for energy flexibility products.
- Led a team of Data Scientists from the 5-weeks S2DS Bootcamp to develop an automated tool for asset portfolio optimisation based on Mixed Integer Linear Programming techniques.
- Designed and developed a Proof-of-Concept system for post-delivery energy trading of "Auto-Consumption Communities" in the Swiss market.

NewsUK
London, UK

DATA SCIENTIST - S2DS FELLOW
Mar. 2017 - Apr. 2017

- Built a model to understand key drivers of total and social media views for articles in "The Times".
- Devised a Python-based recommendation algorithm for articles to be shared on social media and maximise the company reach.
- Presented the results of the project to an audience of data science experts and company management.

Università degli Studi di Torino - Dipartimento di Fisica
Torino, Italy

MARIE SKŁODOWSKA-CURIE FELLOW
Sep. 2015 - Aug. 2017

- Principal Investigator of the NEXTGENPDF research project, funded by the European Commission through the Marie Skłodowska-Curie programme (Grant award 168k €).
- Acted as co-supervisor for 3 Masters theses on Machine Learning/Deep Learning applications.

Niels Bohr Institute - University of Copenhagen
ASSISTANT PROFESSOR

Copenhagen, Denmark
Jun. 2011 - Aug. 2015

- Led an independent research group within the Discovery Center of Excellence initiative funded by the Danish National Research Foundation.
- Initiated an interdisciplinary research project to apply advanced statistical methods to particle physics and cosmology studies.

Albert-Ludwigs-Universität Freiburg
HOCHSCHULASSISTENT/ASSISTANT LECTURER

Freiburg i Br., Germany
Oct. 2007 - May 2011

- Core member of the NNPDF Collaboration that developed and applied a novel methodology based on Artificial Neural Networks and Monte Carlo techniques to particle physics phenomenology studies.
- Supervised one Masters and one PhD student and taught courses at various levels of the Physics degree program.
- Installed and administered a small Linux computing cluster ($\sim$ 15 machines) for the particle phenomenology research group.

University of Edinburgh
POSTDOC RESEARCH ASSOCIATE

Edinburgh, United Kingdom
Nov. 2005 - Sep. 2007

- Initiated new collaborations that developed into long-term, successful research projects focused on applications of Neural Networks and Monte Carlo techniques.
- Tutored students in courses within the Particle Physics PhD programme.

Deutsches Elektron-Synchrotron (DESY)
POSTDOC RESEARCH ASSOCIATE

Zeuthen, Germany
Dec. 2003 - Oct. 2005

- Worked on a project that delivered what is to date one of the most accurate determination of a fundamental physical parameter.

Education

Università degli Studi di Parma
PHD IN THEORETICAL PHYSICS

Parma, Italy
Jan. 2001 - Mar. 2004

- Thesis: *Resummation and Power Corrections: at the edges of the perturbative region in QCD*
- Substantial part of the research activity carried out at LPTHE Jussieu, Paris.

Università degli Studi di Milano
MASTERS (LAUREA) IN PHYSICS

Milano, Italy
Sep. 1994 - Jul. 2000

- Thesis: *QCD analysis of the transverse momentum distribution in Drell-Yan processes*
- Mark: 110/110 *cum laude*
- Thesis results published in peer reviewed journal.

Skills

Operating Systems   Linux (Advanced), Mac Os X (Intermediate)

Software Development   Agile Development (`JIRA`, `GitLab`), Version Control System (`git`, `svn`)

Programming Languages   Python (Intermediate/Advanced), SQL (Intermediate), C++ (Basic)

Data Science Machine Learning   Python data science stack (`numpy`, `pandas/dask`, `matplotlib`, `scikit-learn`)
Natural Language Processing (`nltk`)
Neural Networks and Deep Learning (`Tensorflow/Keras`, `PyTorch`)

Languages   Italian (Native), English (Fluent, C1+), German (Good), French (Good), Spanish (Basic), Danish (Basic)

Extracurricular Activity & Interests

I am an avid skier, an hobby sailor and an amateur fencer. I worked as a Divemaster at FiloSub Diving Center on Isola d'Elba and co-authored a guidebook called "I Fondali dell'Elba - Guida alle più belle immersioni dell'isola". I travel to discover new places, experience different life styles and taste local foods.