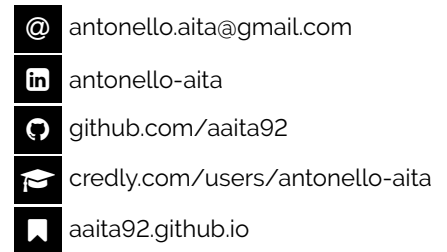


ANTONELLO AITA

Data Scientist

Theoretical Physicist



WHO AM I?

I'm a Data Scientist with a strong mathematical background coupled with the ability to communicate findings to both business and IT leaders. I define myself as an analytical curious that loves to decipher complex problems making use of the top technology tools in order to get business and scientific knowledge and then consolidating results in valuable solutions. I'm really passionate in cutting edge technology as **quantum computing** and **AI** on which I'm keep learning and experiencing.

EXPERIENCE

NOW 11/2017	IBM Italy Consulting
03/2022 - NOW	Managing Consultant Analytics and Data Science
04/2020 - 03/2022	Senior Consultant Analytics and Data Science
11/2017 - 03/2020	Junior Consultant Cloud Application and Analytics

RELEVANT PROJECTS

02/24 - NOW	Explorign path on Generative AI Main Italian TELCO company This project aims to design an advanced RAG framework to enhance the performance of existing tools by implementing best practices from the latest innovative technology. By leveraging cutting-edge methodologies, the framework seeks to optimize efficiency and effectiveness, ensuring seamless integration and superior outcomes Python / Google Cloud Platform / Project Management
01/24 - 02/24	Quantum Main Italian Shipment and mail delivery company This project entails launching a capability-building initiative within a major shipment and delivery company, designed to disseminate foundational knowledge on quantum computing and pave the way for exploring this cutting-edge frontier technologies. Through targeted training and market and technology overview, the goal is to empower the organization to embrace and leverage these advancements effectively Python / Qiskit
10/23 - 12/23	Generative AI for Bibliographic search Main Italian Ministry The aim of this Proof of Concept is to demonstrate how Generative AI can assist users in navigating and interpreting bibliographic content in natural language. I play a pivotal role in this project as the technical lead, responsible for gathering business requirements, designing the technical solution, from the application design to prompt engineering. Generative AI / Python / Project Management
07/23 - Now	IoT edge bridge layer and a predictive maintenance ML model Leading national Airport This project aims to provide to the client an assesment on its assets and provide the right IoT devices to enable data transmission. Then implement an edge brige layer to gather and collect data from assets. At the same time start do develop ML for predictive maintenance on a subset of selected assets. In this project I'm contributing in the asset assesment, data layer designing and ML design and implementation coordinating a team of junior consultants. IoT Platform / Predictive Maintenance ML algorithm / Python
12/22 - 06/23	Data Lake and Analytics on blackbox car data Leading national Assurance Company This PoC consists of the implementation of a Data Lake that collects data from black boxes installed on several million vehicles currently on the road and performs analytics to detect device anomalies. I'm contributing as technical lead to design data structure and data processes. Big Data / Pyspark / IBM Cloud

09/22 – 11/22

News and twitts Enrichments with NLP methods

Leading national Central Bank

This PoC consists on the implementation of NLP models, ML and Rule based, to extract relevant information from news corpus and twitts in order to feed statistical indicator to monitor the activity of bank in providing their services to the users. I contributed as technical lead by leading the team in gathering functional requirements from the client and solution design.

Python / Pyspark / Project Management

05/22 – NOW

Journey on quantum computing

Leading national Bank

This project consists of the exploration and implementation of several financial use cases declined in the quantum paradigm. In this project are involved one of the most important Italian universities that follows the scientific part, the most important Italian bank that offers its knowledge in the financial sector and one of the world's leading companies in the field of quantum computing contributing technology and project management. In this project I contributed as technical lead, business translator and qiskit developer.

Python / Qiskit / Technical Lead

07/21 – 02/22

Automatic Ticket Solver

Leading national Telco company

It is a project that aims to build a full cloud tool able to understand and manage tickets coming from the Customer Care, extracting relevant information using Watson NLP services and then addressing ticket to resolution using RPA technology. I lead the analytics project team working on NLP model training and designing resolution pipelines, monitoring the solution performances and facing the client to communicate business results.

PMO / Python / Pandas / Watson Cloud Services /SQL

02/21 – 06/21

Basic Course on Quantum Computing - Qiskit Package

Leading national Bank and Academia

The course covered the basics theory of quantum computing and the most famous algorithms implemented using the qiskit package, and then focused on a set of deep dive on different arguments (physics, finance, machine learning) where I contributed as instructor.

Quantum Computing / Python / Teaching / Qiskit

02/20 – 10/21

Email Classifier Tool : POC, Development, Deploy and Maintenance

Leading national travel and transportation company

It is a series of projects started with a POC on Watson AI capabilities and then moved to design and drive in production a mail router tool driven by mail classification and metadata extraction performed by Watson Services. In that project I contributed in solution design, functional analysis and as Project Manager I lead the development team for the delivery of the project, the deployment in the productive environment and the maintenance, interacting with business, IT internal and external providers.

Project Management / Watson Cloud Services / OpenShift infrastructure / Kibana

04/20 – 11/21

Electric Power Line Congestion Detection

H2020 European Community

It is part of a H2020 European Commission funded project that aims to develop a new Energy Management System to improve congestion management on High Voltage grid and to maximize RES production by coordinated use of innovative Dynamic Thermal Rating, short-term forecasts and Demand Side Response resources. On that project I contributed in data understanding, model development and python framework building.

Python / CLPLEX

10/19 – 01/20

Renewable Energy Forecasting for Distributed Generation

leading national energy infrastructure company

Renewable energy forecasting for distributed generation developing of an application aimed at forecast the renewable energy distributed generation using machine learning models. For this project I worked on data exploration and model developing, in direct collaboration with a team of specialists from the IBM Research Lab of Ireland.

Python / Cloud Platform / Scikitlearn / XGBoost / Pandas

ACTIVITIES

Quantum Computing

Thanks to the competencies developed handling with the IBM quantum tools I had the opportunity join the IBM Q network and taking part in several activities:

12/2019

Teacher of IBM skills academy pilot course on Quantum Computing

J.T. Watson Research Center - York Town Eight (NY) U.S.A

03/2020

Speaker of Qiskit workshop at Singapore University

On line conference

PUBLICATIONS

Article - 2023

<https://ieeexplore.ieee.org/abstract/document/10313821>

Towards an end-to-end approach for quantum principal component analysis

Article - 2023

<https://www.mdpi.com/1099-4300/25/4/593>

A More General Quantum Credit Risk Analysis Framework

Article - 2022

<https://iopscience.iop.org/article/10.1088/1742-6596/2416/1/012002>

Towards practical Quantum Credit Risk Analysis

Article - 2021

<https://www.mdpi.com/2312-7481/7/8/117>

Simulating Static and Dynamic Properties of Magnetic Molecules with Prototype Quantum Computers

Article - 2021

arxiv.org/pdf/2107.02007.pdf

A Serverless Cloud Integration For Quantum Computing

Article - 2021

<https://ieeexplore.ieee.org/document/9627062>

An innovative short-term congestion management algorithm for the Italian subtransmission grid: the Zonal-EMS Demo of the OSMOSE Project

Published Invention - 2019

<https://priorart.ip.com/IPCOM/000258553>

Method and system to create and deploy Cloud containerized quantum-based web applications using API-exposed quantum computers as back-end.

Publication No. **IPCOM000258553D**

EDUCATION

- 2017 - 2019 **Consulting by Degree**
IBM
Elite development graduate program for consultants
- 2014 - 2017 **M.Sc. Physics**
Alma Mater Studiorum, University of Bologna
Thesis:
"Extended Hubbard model
with soft-shoulder interaction" (EN)
Final Grade: 110/110
- 2011 - 2014 **B.Sc. Physics**
Alma Mater Studiorum, University of Bologna
Thesis:
"Dirac's fermions on graphene" (IT)
Final Grade: 105/110

ACADEMIC GRANTS

- 2016-2017 **Scholarship for thesis abroad**
University of Bologna
Institut de Science et d'Ingénierie Supramoléculaires
- University of Strasbourg

LANGUAGES

Italiano - native
English - very good

INFORMATION

Driving license: category B

CERTIFICATIONS

- 04/23 **Professional Machine Learning Engineer**
Google Cloud Certified
Certification ID: FjfDOO
- 03/23 **Quantum Ambassador**
IBM
https://www.credly.com/badges/334d24e7-0e43-430e-a3f0-efcb4584c0ac/public_url
- 04/22 **AWS certified Machine Learning-Specialty**
AWS
License: GK8K2X9J4EXE
- 03/21 **SAS Certified Specialist: Base Programming Using SAS 9.4**
SAS Global Certification Program
Certificate Verification Number:
HJVXKTT22EVQQ03P
- 01/21 **Introduction to Portfolio Construction and Analysis with Python - Coursera**
EDHEC Business School
License: M5VFVQDKRBXM
- 09/20 **Qiskit Advocate**
IBM
<https://qiskit.org/advocates>
- 11/18 **Machine Learning - Coursera**
Stanford University
Validation Number: Q4DE4CYBPJR1QV9B

HOBBIES

Playing keyboards
Playing Chess
Volunteer Civil Protection