Simone Azeglio

Personal Information

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Education

Oct 2014 – Apr 2018 **Bachelor in Physics** – *University of Turin, Turin, Italy.*

Oct 2018 – Apr 2021 **Master in Physics of Complex Systems** (current **GPA**: 4.0/4.0) – *University of Turin, Turin, Italy.*

Summer Schools

May 2018 – Jun 2018 **Visiting Student** *Centre for Neural Dynamics, Ottawa, Canada*

- Discussing about possible solutions to different Neuroscience related problems.
- Simulating a "strokes toy model" by using **AllenSDK** for data retrieval.

Jul 2021 – Jul 2021 **Lviv Data Science Summer School**, *Ukrainian Catholic University (web-based due to Covid19)*

- Attending classes on: Causal Learning, Bayesian Modeling, Probabilistic Programming and Graph Neural Networks

Experience

Sep 2019 – Present **Guest Writer** – Analytics Vidhya (*Web-based*) & AddFor S.p.A, *Turin, Italy*

- Developing a series of interactive articles on the *Learning Problem*, a comparison between Biological and Artificial Intelligence. Consolidating **Python** and **LaTeX**.
- Converting industrial research papers on **Machine Learning** in blog articles by replicating the related code. Consolidating Deep Learning frameworks: **PyTorch** and **TensorFlow**.

Jul 2019 – Sep 2019 **Visiting Research Student** – University of Ottawa, *Ottawa, Canada* (Cognitive
Jul 2018 – Sep 2018 Neuroscience, Maler's Lab - In collaboration with André Longtin)

- Increased animal tracking accuracy by **33%** and reduced manual labelling time by **90%** by introducing **DeepLabCut** (based on CNNs) instead of non-Deep-Learning based softwares.
- Solved trajectory related issues by designing a "*postural space*" by using **UMAP**.

Feb 2017 – Apr 2018 **Research Assistant (Undergraduate)** – I.N.Ri.M, *Turin, Italy*, (Quantum Information, Genovese's Lab)

- Designing, running and analyzing data for an experiment on the **violation of a Leggett-Garg inequality** (foundations of Quantum Mechanics).
- Expanding personal knowledge on **Quantum Computing** and Information.

Sep 2014 – Present **Private Lecturer**

- Teaching Mathematics, Physics, Programming and Machine Learning to high-school and University students.

Jul 2014 – Sep 2014 **Intern** – SportMalta, *Cospicua, Malta*

- Working as a clerk and data analyst (Excel) in Robert Portelli's office. This job was part of CRT's "Master dei Talenti Neodiplomati" scholarship.

Jul 2013 – Aug 2013 **Intern** – Banca Sella, *Biella, Italy*

- Working in the e-commerce office (Microsoft Excel, Word)

Leadership and Awards

May 2020 – Present **Lead Mentor** – *ProjectX2020 Competition, University of Toronto*

- Selected to get access as the first European University

- Recruited and currently **supervising** *University of Turin's* Team
- **Leading mentors** and organizing educational materials

Mar 2020 – Present **International Admission Scholarship** – *University of Ottawa, Ottawa, Canada*

- Selected as the **only winner** of this international scholarship for research purposes (approx. 132k CAD) in the March 2020 session.

Apr 2019 – Present **Founder & President** – *Machine Learning Journal Club, Turin, Italy*

- Created the **1st Italian** collaborative research project (*no-profit organization*) managed by students, in cooperation with the University of Turin.
- Teaching **Python** for Scientific Computing and Practical Machine (and Deep) Learning to undergraduate and graduate students.
- Designing possible solutions to high-impact problems on society, e.g. **Fake News Detection** (Italian language) or **DeepFakes**.
- Currently competing for Tensorflow Faculty Awards

Apr 2019 – Present **Co-opted Students Representative**

- Designated as Students Representative by the Head of Physics of Complex Systems after the creation of the Machine Learning Journal Club.

Sep 2018 – Sep 2018 **Data Mining Challenge** – Class Challenge, **1st** classified

- Developed NLP models for sentiment analysis, e.g **Word2Vec**, **Doc2Vec**.
- Designed **Data Augmentation** strategies on embedded spaces.

Jul 2014 – Sep 2014 **Master Talenti Neodiplomati** – Scholarship (CRT Foundation)

- Selected as **1 out of 103** eligible students for a *studying-working* 3-months experience in Malta.

May 2014 – May 2014 **Students Athletic Championship** – *Biella, Italy*, **2nd** Classified

- Represented my high school in 400 and 800 meters competitions.

Jan 2014 – Jan 2014 **Students Winter Sports Championship** – *Bardonecchia, Italy*, **2nd** Classified

- Represented my high school in snowboarding: slalom and slopestyle competitions.

Jun 2010 – Jun 2010
Jun 2011 – Jun 2011 **GloBall Cup** – *Enköping, Sweden*, **2nd** Classified

- Represented Italy with my football team (ASD Fulgor Ronco Valdengo) patronised by **UNICEF**.

Skills & Background Knowledge

Coursera's Certificates

Mar 2020 - Apr 2020 **IBM AI Engineering Professional Certificate (IBM)**

- *Machine Learning with Python* (Grade Achieved: **97%**)
- *Scalable Machine Learning on Big Data using Apache Spark* (Grade Achieved: **99.28%**)
- *Introduction to Deep Learning & Neural Networks with Keras* (Grade Achieved: **100%**)
- *Deep Neural Networks with PyTorch* (Grade Achieved: **100%**)
- *Building Deep Learning Models with Tensorflow* (Grade Achieved: **100%**)
- *AI Capstone Project with Deep Learning* (Grade Achieved: **97%**)

Apr 2020 - Present **AI for Medicine Specialization (Deeplearning.ai)**

- *AI for Medical Diagnosis* (Grade Achieved: **100%**)
- *AI for Medical Prognosis* (Grade Achieved: **100%**)
- *AI for Medical Treatment* (Grade Achieved: **in Progress**)

Apr 2020 - May 2020 **Information Visualization Specialization (NYU, New York City)**

- *Information Visualization: Foundations* (Grade Achieved: **99%**)
- *Information Visualization: Applied Perception* (Grade Achieved: **100 %**)
- *Information Visualization: Programming with D3.js* (Grade Achieved: **96.4 %**)
- *Information Visualization: Advanced Techniques* (Grade Achieved: **97%**)

Apr 2020 - May 2020 **Tensorflow in Practice Specialization (Deeplearning.ai)**

- *Introduction to TensorFlow for Artificial Intelligence, Machine Learning, and Deep Learning* (Grade Achieved: **100%**)
- *Convolutional Neural Networks in TensorFlow* (Grade Achieved: **100 %**)
- *Natural Language Processing in TensorFlow* (Grade Achieved: **100 %**)
- *Sequences, Time Series and Prediction* (Grade Achieved: **100 %**)

Apr 2020 - Present **Advanced Machine Learning Specialization (HSE, Moscow)**

- *Introduction to Deep Learning* (Grade Achieved: **100%**)
- *How to Win a Data Science Competition: Learn From Top Kagglers* (Grade Achieved: **100%**)

Programming Languages

Python, *Advanced*. (Numpy, Scipy, Pandas, Matplotlib, Plotly, OpenCV, Scikit-Learn, Tensorflow, PyTorch, OpenAI Gym, OpenAI Universe, Microsoft Malmo, DeepMind Lab).

CSS, HTML, Javascript, Tableau, *Foundations* of Web Development and Data Visualization(D3.js , Tensorflow.js).

C++ and **Java**, *Foundations* of OOP(ROOT Framework).

Go and **Solidity**, *Foundations* of *Smart Contracts* related programming.

GCP and **AWS**, *Foundations* of Cloud Computing and Web Services.

Git, operative knowledge of version control systems.

Linux OS, operative knowledge.

Languages

Italian, *Native*.

English, *Advanced*.

French, *Elementary*.

Interests

Hackathons

May 2020 – Aug 2020 **Top 4 Finalist in BuildwithAI Global Hack**, a bi-annual global hackathon centred around the application of data science and artificial intelligence processes to address global challenges. The 2020 edition was themed around the Covid19 pandemic.

Nov 2019 – Nov 2019 **B-Pioneers** (organized by **Biogen** and **Wired**): Selected to Compete in order to create highly innovative solutions for people affected by **SMA** (**S**pinal **M**uscular **A**trophy). Applications of Complex Systems Physics to biometric data.

Personal Projects

May 2018 – Jun 2018 **MineNavigation**: Navigation Tasks in a Reinforcement Learning Framework

- Developed a Reinforcement Learning exploration strategy for my Minecraft Agent (**Project Malmo**). Source at terna.to.it/tesineEconofisica/navigation.htm

Oct 2015 – Present Designing and solving **CryptoPuzzles**

Volunteering

May 2020 **Speciale Coronavirus**: Moderator in conferences related to Covid-19, held by the University of Turin.

May 2020 – Present **IAML (Italian Association of Machine Learning)**: Member

Mar 2020 – Present **CLAIRE (Confederation of Laboratories for Artificial Intelligence Research in Europe)**: Taking part in different remote talks on Covid related research in Deep Learning, which helped me in producing "DAIgnosis", a project on AI in Medical Diagnosis

Mar 2020 – Present **Covid-19 Forecasting**: Building parts of database by annotating useful news epidemicforecasting.org - **Future of Humanity Institute, University of Oxford**

Mar 2020 – Mar 2020 **Covid-19 News Tracker**: Annotating news for sentiment analysis purposes covid19.scops.ai - **University of Greenwich & ISI Foundation**

Sept 2017 – Mar 2018 **TEDxTorino**: Collaborating as a translator (Italian to English) and as a member of Curators Team.

Oct 2014 – Mar 2015 **Coding with EFF**: Looking for bugs in *HTTPS Everywhere.*

Publications and Workshops

Workshop Talks

Feb 2020 – Feb 2020 **Machine Learning Meets Chemistry** – Organized by the Department of Chemistry (University of Turin) (Programme)

- Presenting Machine Learning Journal Club as a contribution to Open Science.

- Discussing Graph Neural Networks approaches in Science.

Workshop Posters

Sep 2018 – Sep 2018 **Neural Coding 2018** – International Workshop on Theoretical and Computational Neuroscience (www.neuralcoding2018.unito.it)

- Presenting the results from my research period at the University of Ottawa.

May 2017 – May 2017 **Quantum 2017** – International Workshop on Quantum Optics and Quantum Information (www.quantum2017.unito.it)

- Presenting my Undergraduate thesis project.

Blog Writings

Aug 2020 **A Second Step into Feature Engineering: Feature Selection** in *MLJCUnito*. Taking a look at possible Feature Selection techniques

Aug 2020 **An Introduction to Feature Engineering: Feature Importance** in *MLJCUnito*. Shedding light on Feature Engineering, in particular Feature Importance, a central part in any Machine Learning Pipeline.

Jul 2020 **Data Spectrometry or How to Preprocess your Data** in *MLJCUnito*. First article of a to-be series devoted to figure out a way to tackle a Machine Learning competition

Sep 2019 **The Learning Problem: Comparison between Brain and Machine** in *Analytics Vidhya*. First chapter of a series devoted to analyze and decompose the learning problem

May 2020 **DAIgnosis: Exploring the Space of Metrics**. Investigating the usage of Machine Learning and Artificial Intelligence in Medical Diagnosis, with a particular focus on metrics.