Steve **Azzolin**

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Education

University of Trento *Trento, Italy*
M.S. IN ARTIFICIAL INTELLIGENCE SYSTEMS *Sept. 2020 - Curr.*
- Ranking: Top 2%
- Average grade: 29.8/30

University of Trento *Trento, Italy*
B.S. IN COMPUTER SCIENCE *Sept. 2017 - Jul. 2020*
- Final score: 110/110 cum laude
- Thesis: Unsupervised learning for customer segmentation and its **interpretability**

Research Experience

Computer Science and Technology @ University of Cambridge *Cambridge, UK*
RESEARCH VISITING STUDENT *March. 2022 - Sept. 2022*
- MSc Thesis titled "Global Explainability of GNNs via Logic Combination of Learned Concepts"
- Proposed the first Global Explainer for GNNs able to provide explanations in terms of **logic formulas** and faithful to the domain of the input data
- The work lead to two submissions (currently under revision)
- Supervised by Prof. Pietro Liò and Prof. Andrea Passerini

Signals & Interactive Systems Lab *Trento, Italy*
RESEARCH INTERN *Feb. 2020 - Jan. 2022*
- Analyzed biomedical data from smart wearable devices
- Tested, developed, and analyzed **Deep Sentiment Analyzer** for Italian corpora
- Improved the state-of-the-art for the Italian language from 0.64 to 0.69 of F1 score
- Explained the prediction of the model with the XAI tool Captum
- The work lead to two publications
- Supervised by Prof. Giuseppe Riccardi

Blue Reply *Padova, Italy*
MACHINE LEARNING INTERN *Feb. 2020 - Jun. 2020*
- Applied and optimized **Unsupervised ML** techniques for customer segmentation
- Deployed a ML pipeline on IBM Watson

Publications

- Longa A., **Azzolin S.**, Santin G., Cencetti G., Liò P., Lepri B., Passerini A. "Explaining the Explainers in Graph Neural Networks: A Comparative Study". ACM Computing Surveys (Under Review)
- **Azzolin S.**, Longa A., Barbiero P., Liò P., Passerini A. "Global Explanability of GNNs via Logic Combination of Learned Concepts". ICLR 2023 (Under Review)
- **Azzolin S.**, Longa A., Barbiero P., Liò P., Passerini A. "Global Explanability of GNNs via Logic Combination of Learned Concepts". LOG 2022, Extended Abstract (Under Review)
- Roccabruna G.*, **Azzolin S.***, Riccardi G. "Multi-source Multi-domain Sentiment Analysis with BERT-based Models". LREC 2022
- Mousavi S., Roccabruna G., Tammewar A., **Azzolin S.**, Giuseppe Riccardi "Can Emotion Carriers Explain Automatic Sentiment Prediction? A Study on Personal Narratives". WASSA @ ACL 2022

Academic Service

- Reviewer at COLING 2022

Projects

A Multi-Task Learning Approach to Person Re-Identification and Attribute Recognition
- Project for the MSc course *Deep Learning* by Prof. Elisa Ricci.
- Developed a **Siamese CNN** with self-attention jointly trained for Person Re-Identification and Attribute Recognition in **PyTorch**

Non-Rigid Multi-Object Tracking
- Developed algorithms for Non-rigid Multi-object tracking in **Python**, using **OpenCV** and **Sklearn**

Scale-Aware Graph Neural Network for Few-Shot Semantic Segmentation

- Explained and reviewed the aforementioned paper to the class
- Proposed improvements to the overall architecture

Networks

Nova Talent

MENTEE   *Jul. 2022 - Curr.*

- Nova is the merit-based access network where the top 3% of talent connect with each other, develop and accelerate their careers

Lead the Future

MENTEE   *Sep. 2021 - Curr.*

- LeadTheFuture is a leading mentorship non-profit organization for students in STEM, with an acceptance rate below 20, empowering top performing students to achieve their goals and contribute to their communities

Extracurricular Training

Cambridge ELLIS Machine Learning Summer School

ATTENDEE   *July. 2022*

- The Cambridge Ellis Machine Learning Summer School is a distinguished course offered to graduate students, researchers and professionals, featuring engaging experts in their respective field and/or world-recognized professionals speaking about advanced machine learning concepts

Eastern European Machine Learning Summer School

ATTENDEE   *July. 2022*

- Eastern European Machine Learning Summer School is a one-week summer school with the goal of spreading knowledge and expanding networks in the field of Machine Learning. It comprises lectures from foremost scientists in the field, tutorials, workshops, and mentorship sessions

Serbian Machine Learning Workshop

ATTENDEE   *May. 2022*

- Serbian Machine Learning Workshop, part of the EEML Workshops series, is a two-day workshop aimed to popularise topics related to Deep Learning and Reinforcement Learning among students and practitioners

CMMRS 2021

ATTENDEE   *Aug. 2021*

- Pre-doctoral summer school exposing attendees to state-of-the-art research in computer science, and giving the opportunity to interact one-on-one with internationally leading scientists from three of the foremost academic institutions in research and higher learning

Honors & Awards

COMPETITIONS

| 2015 | **Finalist**, Robocup Junior Italia 2016 | *Milan, Italy* |
| 2019 | **Finalist**, Soccer Data Challenge | *Trento, Italy* |

AWARDS

| 2017 | **Awarded**, Mason Vic. Scholarship for Academic Merits | *Colceresa, Italy* |
| 2017-2019 | **Awarded**, Opera Universitaria Annual Scholarship | *Trento, Italy* |