

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 Explainability of GNNs via Logic Combination of Learned Concepts". ICLR2023 (Under Review)
- **Azzolin S.**, Longa A., Barbiero P., Liò P., Passerini A. "Global Explainability 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

Eastern European Machine Learning Summer School

ATTENDEE

July. 2022

Serbian Machine Learning Workshop

ATTENDEE

May. 2022

CMMRS 2021

ATTENDEE

Aug. 2021

Presentations

Cambridge Talks 2022

Virtual

- Presented the work *Global Explainability of GNNs via Logic Combination of Learned Concepts*

24 Nov. 2022

Honors & Awards

COMPETITIONS

2015 **Finalist**, Robocup Junior Italia

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