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Giorgia Adorni

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Current position

10/2022-Today

ROTECO Platform Developer (Lugano, Switzerland)

- Developed and maintained the ROTECO platform, overseeing bug fixes, content updates, and feature implementation.

11/2020-Today

PhD in Informatics at IDSIA (Dalle Molle Institute for Artificial Intelligence), USI-SUPSI (Lugano, Switzerland)

- **Research**: An exploratory study in the cantons of St. Gallen, Vaud and Ticino focused on Assessing the Development of Computational Thinking skills through Intelligent Tutoring Systems; Supervised by *Luca Maria Gambardella* and *Alberto Piatti*.
- **Fields of research**: Intelligent Tutoring and Assessment Systems, Artificial Intelligence, Computational Thinking, Educational Robotics, Computer Science Education, Learning Technologies, Human-Robot Interaction.
- **Additional activities**:
  - Supervised 4 Bachelor's students in Informatics during their final thesis projects, all achieving excellent results.
  - Participated in the writing of a grant proposal titled “Early Algorithms for Young Minds” submitted to the Swiss National Science Foundation (SNSF) under the Project Funding Call (October 2023). Collaborated with *Francesco Mondada*, *Angela Pasqualotto*, and *Alberto Piatti*. The proposal was not funded.
  - Contributed as an Italian instructor for a MOOC on the Thymio II robot (EPFLx).
  - Participated in the *Swiss TecLadies* program as a researcher, sharing my academic journey. Co-organised an escape room with *Irene Zanardi*, supported by *Monica Landoni* and *Masiar Babazadeh*, aimed at motivating participants by highlighting our career paths.
  - Served as a referee at the 2024 regional tournament for the World Robot Olympiad (Bellinzona, Switzerland). Responsibilities included overseeing matches, evaluating team performances, and ensuring fair play and adherence to competition rules.
  - PhD Student Representative at USI since June 2024.
- **Recent publications** (more on Google Scholar):
  - G. Adorni*, I. Artico, A. Piatti, E. Lutz, L. M. Gambardella, L. Negrini, F. Mondada, D. Assaf (2024). Development of algorithmic thinking skills in K-12 education: A comparative study of unplugged and digital assessment instruments. CHBR, vol 15, 100466.
  - G. Adorni*, S. Piatti, V. Karpenko (2024). Virtual CAT: A multi-interface educational platform for algorithmic thinking assessment. SOFTX, vol 27, 101737.
  - G. Adorni*, A. Piatti. (2024). The virtual CAT: A tool for algorithmic thinking assessment in Swiss compulsory education. arXiv preprint arXiv:2408.01263.
  - G. Adorni*, A. Piatti, E. Bumbacher, L. Negrini, F. Mondada, D. Assaf, F. Mangili, L. M. Gambardella. (2024). A theoretical framework for the design and analysis of computational thinking problems in education. arXiv preprint arXiv:2403.19475.
  - S. Corecco, G. Adorni* & LM. Gambardella. (2023). Proximal Policy Optimization-Based Reinforcement Learning and Hybrid Approaches to Explore the Cross Array Task Optimal Solution. MAKE, vol. 5, no. 4, pp. 1660-1679.
  - G. Adorni, F. Mangili, A. Piatti, C. Bonesana & A. Antonucci. (2023). Rubric-based Learner Modelling via Noisy Gates Bayesian Networks for Computational Thinking Skills Assessment. JCOMSS, vol. 19, no. 1, pp. 52-64.
  - A. Piatti, G. Adorni*, L. El-Hamamsy, L. Negrini, D. Assaf, LM. Gambardella & F. Mondada. (2022). The CT-cube: A framework for the design and the assessment of computational thinking activities. CHBR, vol 5, 100166.

Professional experience

02/2021-09/2023

Teaching Assistant at USI Università della Svizzera italiana (Lugano, Switzerland)

- *Data Analytics,* Spring 20/21 (EN), supervised by professor *Fabio Crestani* (MSI and MAI programs).
- *Introduction to Artificial Intelligence e ML*, Autumn 21/22 (IT), supervised by professor *Cesare Alippi* (MSII program).
- *Machine Learning*, Spring 21/22 and 22/23 (EN), supervised by professor *Cesare Alippi* (BSc and MFT programs).
- *Artificial Intelligence*, Autumn 22/23 (EN), supervised by professor *Luca Maria Gambardella* (MAI, MCS and MSI programs).

11/2018-05/2019

Data Scientist intern at Digital 360 - partner4innovation (Milan, Italy)

- Data preparation and analysis (R and PowerBI) and business process optimisation via Process Mining (ProM, Apromore).
- Machine Learning model development (Python - TensorFlow).
- Chatbots development (Dialogflow - javascript).

03/2018-07/2018

Machine Learning researcher at MAD Laboratory, Università degli Studi di Milano-Bicocca (Milan, Italy)

- Working on a Text Mining problem with TensorFlow in collaboration with researchers from the departments of Computer Science and Psychology.

06/2017-07/2018

Tutor of the University computer labs, Università degli Studi di Milano-Bicocca (Milan, Italy)

- Students support during courses and exams and IT technical assistance to students and professors.

Education

09/2019-10/2020

Master of Science in Informatics, Double Degree, USI - Università della Svizzera italiana (Lugano, Switzerland)

- Theses titled Simulation of robot swarms for learning communication-aware coordination focused on Machine Learning, Artificial Intelligence, Deep Learning, Robotics, achieving summa cum laude (9.07/10); Code available on GitHub.

09/2018-10/2020

Master of Science in Computer Science, Double Degree, Università degli Studi di Milano-Bicocca (Milan, Italy)

- Attended Machine Learning, Data Analytics, and Probabilistic Decision Models courses, achieving a final degree mark of 110L/110.
- Teaching assistant of *Probability and Statistics,* 19/20 and 20/21 (IT), supervised by *Fabio Antonio Stella* (BSc MAI program).

09/2015-07/2018

Bachelor of Science in Computer Science, Università degli Studi di Milano-Bicocca (Milan, Italy)

- Thesis titled Neural networks for learning personality traits from natural language, achieving a final degree mark ok 105/110.

Languages

Italian mother-tongue; **English** C1; **French** B2; **Spanish** A2.

IT skills

- Web Development: HTML/CSS, MySQL, PostgreSQL, JavaScript, React;
- Programming Languages: Python, Java, R, JavaScript, Dart;
- Scientific Languages: LaTeX, MATLAB, Mathematica;
- Others: Dialogflow, PowerBI, Signavio, ProM, Apromore;
- Machine Learning: PyTorch, TensorFlow, Keras;
- Tools: Jupyter, Numpy, Pandas, Seaborn, Flutter;
- Robotics: ROS, Gazebo, Enki;

Interests

Photography, Drones, Cycling, Swimming, Music, Plants