# CARLO ROMEO

*Ph.D. Student*

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## EDUCATION

**05/2025 - 11/2025**

**PhD Visiting,** Universitat Autònoma de Barcelona (UAB), Barcelona, Spain
Computer Vision Center (CVC)
Topics of research: Reinforcement Learning, Token Pruning, Transformer
Advisors: Dimosthenis Karatzas, Andrew D. Bagdanov

**2022 - ongoing**

**PhD in Artificial Intelligence,** University of Pisa / University of Florence
Media Integration and Communication Center (MICC), Pisa/Florence, Italy
Topics of research: Reinforcement Learning, Offline Reinforcement Learning, Computational Efficiency
Advisors: Andrew D. Bagdanov

**2018 - 2020**

**M.Sc in ICT Engineering,** Mediterranean University, Reggio Calabria,
Grade: 110/110 cum laude
Thesis: Evaluation of Natural Language Processing basic techniques from a computational requirements point of view, and development of a conversational chatbot for resource-constrained systems.

**2014 - 2018**

**B.Sc in ICT Engineering,** Mediterranean University, Reggio Calabria
Grade: 88/110
Thesis: Created a mini First-Person-Shooter videogame in Unreal Engine 4, focusing on the development of NPC behavior using state machines.

## WORK EXPERIENCE

**2022 - 2023**

**Adjunct Professor,** Mediterranean University, Reggio Calabria
Job Duties: teaching Machine Learning and Deep Learning techniques using TensorFlow and evaluating students' group projects.

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| **04/2021 - 10/2022** | **Junior Machine Learning Engineer,** Relatech Ithea, Cosenza<br>Job Duties: Design and deploy AI techniques to meet customers' needs as part of an R&D team.<br>Topics: Anomaly Detection and Recommendation Systems. |
| **10/2020 - 02/2021** | **Machine Learning Engineer Intern,** Accenture, Milan<br>Job Duties: Develop AI solutions to meet customers' needs within the Salesforce environment. |

## SELECTED PUBLICATIONS

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| **2025** | C. Romeo*, G. Macaluso*, A. Sestini, A. Bagdanov. SPEQ: Offline Stabilization Phases for Efficient Q-Learning in High Update-To-Data Ratio Reinforcement Learning. Reinforcement Learning Conference **(RLC)** |
| **2025** | C. Romeo, A. Bagdanov. NTRL: Encounter Generation via Reinforcement Learning for Dynamic Difficulty Adjustment in Dungeons and Dragons. Conference of Games **(CoG)** |
| **2024** | C. Romeo, A. Bagdanov. Offline Reinforcement Learning with Imputed Rewards. Reinforcement Learning Conference @ RLBrew Workshop **(RLC)** |

## TECHNICAL SKILLS

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| **Frameworks and Tools** | OpenAI Gymnasium, PyTorch, NumPy, Scikit-learn, Pandas, Matplotlib |
| **Programming Languages** | Python |
| **Miscellaneous** | Unity, Unreal Engine, Git, Bash |

## LANGUAGES

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| **Italian** | Native |
| **English** | Full professional proficiency |

*(Last update: July 2025)*