Matteo Monti

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Education

Politecnico di Milano | 2021-2024
Master's degree in Computer Science and Engineering
Milan, Italy
Expected grade 108/110

Politecnico di Milano | 2018-2021
Bachelor's degree in Computer Science and Engineering
Milan, Italy
96/110

Liceo Enrico Fermi | 2013-2018
Diploma Liceo Scientifico delle Scienze Applicate
Cantù, Italy
95/100

Languages

Italian
Mothertongue

English
Fluent in writing, speaking and listening

Technical Skills

Programming languages
Python, C#, C, Java, Matlab, R

Machine Learning Frameworks
PyTorch, Tensorflow, Keras

Operating Systems
Windows, MacOS, Linux

Software frameworks familiarity
Unity, Docker

Tools
VS, VS Code, PyCharm, IntelliJ, Rider, Eclipse, Anaconda, Matlab, RStudio, Neo4J, MongoDB, Microsoft Office

About Me

Driven MSc student at Politecnico di Milano, currently pursuing a Master's degree in Computer Science and Engineering with a specialization in Artificial Intelligence. During my academic journey I've developed a strong foundation in cutting-edge technologies and a keen focus in the realms of Machine Learning, Data Mining and Deep Learning. Currently, my interest lies in Neural Architecture Search and generative models; my ongoing Master's thesis aims at exploring the promising possibilities that arise from the intersection of these two exciting fields. I'm on course to graduate in April 2024.

Key Projects

Master's degree thesis: Neural Architecture Generation with Diffusion Models

Relator: Prof. M. Matteucci | Tutor: PhD E. Lomurno
Jul 2023 - Apr 2024, Politecnico di Milano

Neural Architecture Search (NAS) has established itself as a cutting edge technique for the automation of neural network design. My research master's thesis aims at the exploration of the intriguing possibilities offered by the implementation of Diffusion probabilistic models as generative component in a Neural Architecture Search framework.

Keywords: AI | Neural Networks | Deep Learning | Generative AI | Diffusion Processes | Neural Architecture Search | Python | PyTorch

CLIP-based Zero-shot classification

Prof. M. Matteucci, Prof. G. Boracchi | Course: Advanced Topic in Deep Learning
Feb 2023 - Set 2023, Politecnico di Milano

Design, train and test a deep learning dual encoder model inspired by OpenAI's CLIP architecture. Our final model was able to mimic the original CLIP model performances in image retrieval tasks. Additionally we implemented a more advanced Zero-shot classifier able to reach state of the art performances compared with more standard architectures.

Keywords: Deep Learning | CLIP | OpenAI | Transformers | Neural Networks

Score: 30/30

Personal Skills

Passionate attitude and drive
Throughout my academic journey, my unwavering passion for computer science has been the driving force behind my pursuit of knowledge.

Ability to perform under pressure
I have consistently proven my ability to manage rigorous academic schedules and delivering excellent results within deadlines.

Organization and attention to details
My meticulous approach to tasks and strong organizational skills have been instrumental in managing complex academic projects.

Creativity
I approach new challenges with a creative mindset, leveraging on my prior knowledge to help develop innovative solutions.

Collaborative attitude
I thrive in team environments and actively contribute to a collaborative atmosphere, appreciating the opinions and input of my peers as we work toward common goals.

Personal Interests & Hobbies

Reading, writing, science fiction, comics and mangas, listening to music, playing the guitar, videogames, Formula 1, watching movies, skiing, working out, mountain hiking, Tech & Hardware.

Just the Two of Us!
Prof. P. Lanzi, Prof. D. Loiacono | Course: Videogame Design and Programming
Sept 2023 - Feb 2023, Politecnico di Milano

I took part as team leader of a 5-people team for the development of a 2D platformer videogame. The project required us to design from scratch a videogame in Unity engine. We were tasked with designing and developing the game mechanics and the game assets. As team leader, it was my responsibility to coordinate the team and to communicate with the professor for incoming deadlines and monthly updates.

Ranked in the top-5 best games among the 22 developed in that year course edition.

Keywords: Unity game engine | Team management | C# | Game Design

Score: 30/30

Additional Projects

Time Series Classification with RNNs and CNNs
Prof. M. Matteucci | Course: Neural Networks and Deep Learning

The project consisted in the implementation of a Recurrent Neural Network (RNN) model and a training pipeline to develop a model capable of obtaining the highest possible accuracy for a time series classification task.

Score: 5/5

Image Classification with CNN techniques
Prof. M. Matteucci | Course: Neural Networks and Deep Learning

The project consisted in the implementation of a Convolutional Neural Network (CNN) model and a training pipeline to develop a model capable of obtaining the highest possible accuracy for a classification task on a dataset of various images of plants.

Score: 5/5

Masters of Reinassance Digital Board Game
Prof. P. San Pietro | Course: Software Engineering

A digital implementation of the "Masters of the Renaissance" Cranio creations' board game, written in Java using the MVC pattern, complete with CLI and GUI interfaces, single-player mode, remote play up to 4 players.

Score: 30/30

DREAM: Data-Driven Predictive Farming in Telangana
Prof. M. Rossi | Course: Software Engineering 2

The project's objective consisted in the design and realization of the Requirements Analysis and Specifications Document (RASD) and the Design Document (DD), for a Data-Driven Predictive farming system, (named DREAM) for the Telangana Indian region aimed at improving the quality of life of rural India's farmers.

Score: 30/30