Nebolosi **Lorenzo**

MSc in Computer Science Engineering · Computer vision and robotics

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Summary

MSc in computer science engineering, focus on Robotics, Data analysis and computer vision. During my years of high school and University I had the opportunity to learn work with different frameworks and tools, such as git, github, docker, and maven. Currently working in a start up company that was founded as a spin-off from Politecnico di Milano. As a software engineer I define and implement different architectures for the software used to perform 0D/1D CFD simulations of internal combustion engines.

Work Experience

SurSum | Politecnico di Milano

Milan, Italy

Software Engineer — *Sep. 2024 - Present*

- Design and implementation of post processor for visualize and analyze data coming from CFD simulation of internal combustion engines
- Uprgade of python commercial software for defining the structure of the engine to be simulated, from python2 to python3

Projects

Thesis project for BSc

Milan, Italy

Graph Neural Networks applied to mathematics — *Sep. 2023 - Sep. 2024*

- Reasearch on Applications of graph neural network to partial differential equations
- Implementation of Graph Neural Network model using HydraGNN package and tensorflow geometric, developed by Oak Ridge National Laboratory (ORNL). Definition of the model structure, imput conversion and hyperparameter tuning.
- Generation of the dataset using Finite Element Methods and FEM software to recreate a topology optimization problem as a case study
- Testing and validation of the obtained model and analysis of the obtained results.

Final projects for MSc

Milan, Italy

Java, C and VHDL — *Sep. 2020 - Sep. 2021*

- Digital version for the board game Maestri Del Rinascimento
  - Implementation in Java of a board game with a client-server architecture
  - MVC Pattern and asynchronous requests to the server
  - Collaboration tools such as git and software life cycle handled with Maven
- Algorithms and data structures project in C
  - Study and implementation of different algorithms such as Dijkstra's
  - Memory efficient and time efficient optimization
- VHDL Design, implementation and report of a board component included and tested in a bigger architecture

Other projects during my MSc

Milan, Italy

Robotics, Neural networks, computer vision and sensor systems — *Sep. 2020 - Sep. 2021*

- Robot odometry calculation and location (SLAM) using ROS and bag of real data from encoders and sensors for Robotics course (Grade 30/30)
- Elaboration of computer vision dataset with multiplane homographies and benchmarking of different alghoritms with OpenCV (Grade 27/30)
- Design and implementation of two different Neural Network architectures for image classification and time series analysis (Grade 29/30)
- Multiple projects using STM32 microcontroller, multiple sensors and other circuit components such as capacitors (Grade 26/30)

Education

Politecnico di Milano

Milan, Italy

MSc in Computer Science and Engineering — *2021 - 2024*

- Focus on Robotics, data analysis and computer vision
- Many projects in a vast variety of fields such as computer vision, electronics and neural networs

Politecnico di Milano

Milan, Italy

BSc in Computer Science and Engineering — *2018 - 2021*

- Basics of computer science engineering such as OOP, compiler architectures, physics, electronics and statistics

New Albany High school

Indiana, Usa

Exchange Year Certification — *2016 - 2017*

- During my exchange year in the United States I've had the opportunity to learn new cultures, confrontate myself with different points of view and grow as a student and as a person

ISII G. Marconi *Piacenza, Italy*

TECHINICAL HIGH SCHOOL DIPLOMA *2013 - 2018*

- Many hands on project on popular framework such as .NET
- Server administration using SQL
- Web development with Node.js, HTML and JavaScript
- Automation projects using arduino, electronics components and boards

Competitions

2017 **3rd Place**, IUPUI Coding competition *Indiana, USA*