

Giovanni Dispoto

PHD STUDENT IN REINFORCEMENT LEARNING

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Education

Politecnico di Milano

PHD IN REINFORCEMENT LEARNING

Milan, Italy

Nov 2023

- The objective of my PhD project is to develop Reinforcement Learning algorithms for Trading and Market Making, in collaboration with Intesa Sanpaolo, one of the top banking groups in Europe. Advisor: Prof. Marcello Restelli

Politecnico di Milano

M.S. IN COMPUTER SCIENCE AND ENGINEERING

Milan, Italy

Sept 2020 - May 2023

- Final score: 105/110
- *Main Courses* : Machine Learning, Reinforcement Learning (PhD level course), Artificial Neural Networks and Deep Learning, Applied AI in Biomedicine.

Politecnico di Milano

B.S. IN ENGINEERING OF COMPUTING SYSTEMS

Milan, Italy

Sept 2017 - Sept 2020

Final score: 95/110

Experience

Politecnico di Milano

MASTER THESIS STUDENT

Milan, Italy

May 2022 - May 2023

Survival prediction of Non-Small Cell Lung Cancer (NSCLC) patients through 3D Autoencoder-based features extraction from CT scans. The features extracted were used for the development of Survival Prediction models using Tree-based models, SVM-based models and CoxPH/DeepSurv.

Projects

A selection of relevant projects. Other projects can be found on my GitHub profile

Performance Benchmarking of Deep Learning Applications

(<https://github.com/giovannidisposto/a-GPUBench>)

Politecnico di Milano, AIRLab

RESEARCH PROJECT. SUPERVISORS: PROF. DANILO ARDAGNA, FEDERICA FILIPPINI

Feb 2021 - Sept 2021

- This framework is part of the **AI-SPRINT Project funded from the European Union Horizon 2020 research and innovation programme.**
- Adaptation of the tf-slim by Google on Tensorflow 2
- a-GPUBench allows training a model on a target machine (e.g. a Server or AWS service) remotely.
- The architecture, the hyperparameters and the dataset are specified using an XML file.

Premature Ventricular Complexes (PVCs) and Premature Atrial Complexes (PACs) detector using an ECG-based Deep Learning approach

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COURSE TEAMWORK

- 1-D Convolutional Neural Network (1D-CNN) that classifies a beat as Normal Sinusoid Beat (N), Premature Ventricular Complexes (S) and Premature Atrial Complexes (V) relying on the ECG signal
- The starting dataset was composed by about 92% of N, 4.5% of V and 3.5% of S samples
- Our model reached the accuracy of 95% on N, 83% on V and 76% on S on the test set with unseen patients.
- We applied XAI techniques like LIME and GradCam to cross-check that the model was learning features that we were expecting like R-R peak distance.

Image Classification, Image Segmentation and Visual Question Answering models

(<https://github.com/giovanndispoto/AN2DL-homeworks>)

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COURSE TEAMWORK

- Implemented different deep learning models using Tensorflow for 3 in-class challenges
- For the image classification we used transfer-learning on VGG-16 reaching 134th position over 192 teams
- For the image segmentation challenge we implemented a U-Net reaching 73rd position over 208 teams
- For the Visual Question Answering task we implemented an Xception + LSTM model reaching 24th position over 146 teams.

Santorini Game (<https://github.com/giovanndispoto/ing-sw-2020-Crippa-Dispoto-Facchinetti>)

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TEAMWORK FINAL PROJECT

Design and implementation of an online version of Santorini Game by Cranio Creation using Java and JavaFX with particular attention on Design Pattern. This project was part of my BSc final exam of Software Engineering.

Skills

Programming Languages: C, Java, Python, PHP, JavaScript, Swift.

Libraries: Tensorflow, Scikit-Learn, Pandas, Numpy, Pytorch

Others: LAMP stack, Docker

Languages: Italian (native), English (B2)