Andrea Oriolo

Master Computer Engineer

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Education

University of Padua – Padova

(LM-32) MASTER DEGREE IN COMPUTER ENGINEERING   (2018 - 2021)
- Deep Learning Techniques for Anomaly Detection on Answers to Online Questionnaires

University of Calabria – Rende (CS)

(L-8) BACHELOR DEGREE IN COMPUTER ENGINEERING   (2013 - 2018)
- Blockchain Protocol - The technology that could revolutionize the Internet world

Digital Skills

Programming languages

- Python | Java | C++ ●●●●○
- C | SQL | HTML | CSS ●●○○○

Operating Systems

MacOS | Microsoft Windows | Linux

Software Tools

Eclipse | XCode | Visual Studio Code | Apache Spark | Hadoop MapReduce | PyCharm | IntelliJ IDEA | PostgreSQL | Git | Bash | Google Colaboratory | Microsoft Office (Word, Excel, PowerPoint) |

Projects

Machine Learning (Python: Tensorflow, Keras, Numpy, Scikit-learn, Matplotlib)
- Implementation of a convolutional neural network to recognize handwritten digits using the MNIST dataset and an Autoencoder for removing noise in images.
- Implementation of a Naive Bayes classifier using the 20newsgroups dataset.
- Comparison of different Ensemble Learning techniques using Random Forest, AdaBoost, GradientBoosting, Bagging and Stacking.

Artificial Intelligence (Python)
- Implementation of a ''User-based Collaborative Filtering'' recommendation system using the MovieLens dataset.

Big Data (Java | Apache Spark | Hadoop MapReduce)
- Implementation of an efficient algorithm for k-median clustering based on the k-means ++ strategy.

Autonomous Robotics (C++ | Robot Operating System (ROS))

- Study of three different aspects of autonomous robotics.
1. Perception: Identification of objects tagged by AprilTag through a Kinect.
2. Manipulation: Implementation of a ROS MoveIt routine capable of manipulating a UR10 to collect objects and place them on a target area avoiding collisions.
3. Navigation: Implementation of a ROS MoveIt routine that allows a mobile robot to move around an arena avoiding obstacles.

Computer Vision (C++ | OpenCV)

- Camera calibration via checkerboard to extract the intrinsic parameters of the camera used and the distortion parameters.
- Identifying the lane and road signs of an image provided using the OpenCV features: Canny Edge Detector, Hough Line Transform and Hough Circle Transform.
- Keypoints, Descriptors and Matching: Creation of a panoramic image given a sequence of separate images.
- Object recognition and tracking: Detection and tracking of a series of objects in a video.

Parallel Computing (C | OpenMP | MPI)

- C implementation of the parallel Floyd-Warshall algorithm compared with the sequential version by calculating execution time, speedup and efficiency.

Bioinformatics (C++ | FM-Index| MFCompression)

- Analysis of k-mers representation algorithms in compact form (de Bruijn, UST, Unitig and Simplitig graphs).

Algorithms and Data Structures (Java | Object Oriented Programming)

- Spyro2D: Implementation of a platform game inspired by ''Spyro - The Dragon''

Language skills

- Italian (Native language)
- English (Listening - B1 | Reading - B1 | Writing - B1 | Expression - B1)

Open Badge

- Master's degree in Ingegneria Informatica

Driving licenses

- Driving license B