

# MONTEIRO DEL PRETE

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## WORK EXPERIENCE

### Software Engineer @ Teoresi Group

03/2023 – present

*C++, Python, Qt, React*

*Naples, Italy*

- Developed desktop application for data diagnosis with real-time system update <1s for 500 samples.
- Increased the communication security of Jitsi Meet by 5% by implementing Quantum Key Distribution.
- Increased productivity of pharma robots by 20% by implementing a custom algorithm for the Pallet Loading Problem.
- Designed and implemented a web scraper on Standards Development Organizations portals increasing analysis time by 85%.

### Software Engineer @ Teoresi Group

09/2020 – 11/2020

*Python, AWS*

*Naples, Italy*

- Reduced traffic congestions by designing and developing a communication network for cloud-based video processing for road signs detection and recognition.
- Integrated Haar Cascade Classifier in AWS Lambda for cloud processing.
- Integrated AWS S3 for storage and AWS Iot Core for communication.

## TECHNICAL SKILLS

**Programming Languages** C++, Python

**Databases** Postgresql

**Frameworks** Qt 6.5 LTS, Tensorflow, Keras

**Devops Technologies** Docker, Git, CMake, CI/CD

**Operating Systems** Linux based, Ubuntu

Data Structures and Algorithms

Software Engineering principles, Design Patterns, Clean Code

Deep Learning and Machine Learning with interest in Computer Vision (CNN) and Reinforcement Learning

## EDUCATION

### University of Naples "Federico II"

12/2020 – 07/2023

*Master of Science in Artificial Intelligence 110/110 cum Laude*

*Naples, Italy*

### University of Naples "Federico II"

09/2017 – 12/2020

*Bachelor's Degree in Computer Science 110/110*

*Naples, Italy*

## PROJECTS

### Proximal Humerus Fractures (PHFs) Recognition *Python, Tensorflow*

03/2023

- Developed a deep learning model for PHFs recognition (i.e. segmentation and labeling).
- Increased the energy consumption for training by implementing hybrid (2D/3D) deep learning model.
- Implemented the Triplanar U-Net (Sundaresana et al.)

### Real-time Hand Gesture Recognition *Python, Tensorflow*

01/2023

- Developed a real-time system for hand gesture recognition.
- Integrated MediaPipe to work with hand skeleton model.
- Implemented homographic transformation and Hough circle detection heuristic classification.

### Self-Driving Car with Reinforcement Learning *C#, Unity*

09/2022

- Self-Driving Car with Deep Reinforcement Learning algorithms in Unity-MLAgents environment.
- Compared two Deep Reinforcement Learning algorithms: PPO and SAC.

### Convolutional Neural Network from scratch *Python*

07/2022

- Implemented from scratch feed-forward layers, convolutional layers and learning with backpropagation for hand digits recognition.

## CERTIFICATIONS

### British Council IELTS

01/07/2022

*English Student - 7.0/9.0 Score*

*Naples, Italy (IT)*

### Kaplan International Languages

06/08/2018 – 24/08/2018

*English Student - B2 Level*

*Santa Barbara, California (US)*