

#### **CONTACT**

- Via Dante Alighieri, 213 Capistrano, 89818, IT
- toredev@outlook.it
- +39 3887808493
- in linkedin.com/in/t0re199
- t0re199.github.io
- github.com/t0re199

# **SALVATORE PETROLO**

#### **COMPUTER SCIENCE ENGINEER**

#### **ABOUT**

I am a MSc Artificial Intelligence and Machine Learning Engineer. I am very determined and enthusiastic, I have developed good planning and organisational skills.

I'm confident working independently or as part of a team, I enjoy facing new challenges and developing my own solution for them. I'm resilient and very curious, I love learning new things, every day.

#### **EDUCATION**

# Master's Degree: Artificial Intelligence and Machine Learning

Univeristy of Calabria, Arcavacata (CS) | 2020 - 2022 Thesis: "Deep Anomaly Detection on ECG for identifying arrythmias".

Degree Score: 110/110 with honors and academical mention.

# **Bachelor's Degree: Computer Engeneering**

Univeristy of Calabria, Arcavacata (CS) | 2016 - 2020

Thesis: "Object Oriented Data Language: a language for devoloping dynamic data collection web app".

Degree Score: 110/110 with honors.

# **Diploma: Technical Institute in Computer Science**

IIS Vibo, Vibo Valentia (VV) | 2011 - 2016

Degree Score: 100/100.

## HARD SKILLS

Over time, I've been continuously increasing my knwoledge.

# **Programming Languages**

- Assembly
- C
- C++
- Cuda C/C++
- C#

**SOFT SKILLS** 

**Problem Solving** 

Communication

Presentation

**Self Starter** 

Leadership

**Teamwork** 

Resilience

Python

- Lisp
- Swift
- Java
- Php
- Javascript
- Typescript

# **Libraries for Machine & Deep Learning**

- NumPy
- Pandas
- SciPy

- TensorFlow
- PyTorch
- TorchVision

## **Operating Systems & Shells**

- Linux
- Mac Os
- Windows

- Bash
- Zsh
- PowerShell

## **Cloud Services**

- Microsoft Azure
- Google Cloud Platform
- Amazon Web Services

## **Mobile Software Development**

• Android: Android Studio, Java

• iOS: Xcode, Swift

## **Big Data Management**

• Apache Spark

Apache Kafka

Hadoop Map Reduce

- HDFS
- NFS
- MongoDB

# **Web Development**

- JavaEE
- EJB
- JPA

**LANGUAGES** 

Italian: Native Speaker

**Engligh: IELTS B2** 

- JSF & JSP
- Angular

- JBoss
- Apache Tomcat
- Hibernate
- PostgreSQL
- MySQL

#### **Tools**

- Nano
- Vim
- Visual Studio (Code)
- Intellij Idea
- PyCharm
- Codeready Studio
- Eclipse

- Xcode
- Android Studio
- Bash
- Maven
- Git
- VMWare Fusion
- Virtual Box

#### **CERTIFICATIONS**

## **Cisco CCNA 1: Routing and Switching - 2016**

**Cisco IT Essential - 2015** 

**IELTS B2 - 2015** 

#### **THESIS PROJECTS**

Below is a list and a brief description of my Bachelor and Master Thesis projects. A more detailed description can be found on the corresponding GitHub repo.

## **OODL Project**



#### Bachelor's Degree Project

Object Oriented Data Language (OODL) is an imperative programming language I developed for my Bachelor's Degree thesis. OODL makes developing a web application for collecting data as easy as instantiating an object in any object oriented programming language.

OODL was designed to allow developers to build dynamic web applications for data collections (also very complex ones) which execute client-side.

## **DPNet Project**



#### Master's Degree Project

Development of an Artificial System which is able to identify arrhythmia episodes in arbitrary length 15-leads ECG. The problems of identifying arrhythmias in ECG has been addressed as Semi-Supervised Anomaly Detection Task. So, in this context, arrhythmias can be seen as anomalies into normal ECGs.

The system's core is a Deep Convolutional AutoEncoder to whom i've given the name DPNet.

#### **ACADEMICAL PROJECTS**

Below is a list and a brief description of some of my projects. A more detailed description along with source code can be found on the corresponding GitHub repo.

# Artificial Intelligence & Knwoledge Rapresentation and Reasoning Project



Team Project

Java implementations of an automatic player for the Murus Gallicus game. A parallel implementation of the well-known MiniMax algorithm with Alpha Beta pruning.

# **Images and Videos Analysis Project**



Team Project

Multi-Class and Multi-Label Classification on an unbalanced film trailer dataset in Python. In this project the well-known image classification architectures ResNet and Vgg have been used as part of a custom modular architecture. PyTorch has been used as Gradient Computing library.

# **Architectures and Programming of Processing Systems Project**



Individual Project

Various C & Assembly optimized version of the Stochastic Gradient Descent x SoftSVM x Polynomial Kernel Method algorithm. Provided optimizations make use of advanced programming concept such us SIMD parallelism, which is exploited by using Intel SSE and AVX instruction sets, and Cache Blocking.

## **Big Data Management Project**



Individual Project

Implementation of a query tool in Python using the Big Data Processing tool, Apache Spark and the No-SQL datastore MongoDB. PySpark and PyMongo were used to interface with Spark and MongoDb.

# **Distributed Systems and Cloud Computing**



Individual Project

Bl3, whose name derives from Bluetooth low energy, is a distributed system that allows Covid-19 contact tracing. The system consists of an Android Application and a JavaEE Backend.

## **Data Mining Project**



Team Project

The project consists in Data Analysis, Exploration and Multi-Class Classification on a Google Play Application Dataset in Python.

#### **GPGPU Project**



Individual Project

CUDA C parallel implementation of the Merge operation.
Algorithm's parallelization is based on the co-rank function provided by Siebert et al. in their work Efficient MPI Implementation of a Parallel, Stable Merge Algorithm.

## **Machine and Deep Learning Project**



*Individual Project* 

Application of Machine and Deep Learning techniques in Python on images and texts. On both datasets two tasks were addressed: Multi-Class Classification and Anomaly Detection. The TensorFlow library has been used for developing Deep Learning models.

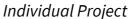
# **Software Platforms for Web Applications**



Individual Project

Implementation of ShopCart web application. In this project the following technologies were used: Anguar (to define a Single Page Application), JavaEE + JAX-RS + EJB (to provide REST web serving and defining business logic), JPA + Hibernate (for persistency).

## **Social Networks and Medias Analysis**





Sentiment Analysis in Python on an amazon english reviews dataset using various Transformer architectures from Hugging Face. PyTorch has been used as Gradient Computing Library.

# Software Engineering Project 1: Scheduler



Individual Project

Java Implementation of Scheduler with constraints based on the backtracking algorithm. Several Design Pattern were used. A GUI has been provided too.

# **Software Engineering Project 2: Sudoku**



Individual Project

Java Implementation of Sudoku Solver based on the backtracking algorithm. Several Design Pattern were used. A GUI has been provided too.

I authorize the processing of my personal data on the CV pursuant to art. 13 d. lgs. 30 June 2003 n. 196 - "Code regarding the protection of personal data" and art. 13 GDPR 679/16 - "European Regulation on the protection of personal data".