

# Dimitri Diomaiuta

## Artificial Intelligence Computer Science

### ABOUT

Multidisciplinary and collaborative individual with a strong background in computer science and artificial intelligence. Seeking to transform scientific and technological knowledge to create ad hoc solutions.

### CONTACT

work@dimitri.ai  
github.com/dda410  
linkedin.com/in/dda410  
+39 329 663 3645

### EDUCATION

#### MSc in Artificial Intelligence

with Distinction  
University of Southampton  
United Kingdom  
2018-2019

#### BSc in Computer Science

Vrije Universiteit Amsterdam  
Netherlands  
2014-2017

### CERTIFICATES

#### Machine Learning Engineer

Nanodegree - Udacity  
May 2020

### LANGUAGES

Italian: native  
English: full professional  
Greek: bilingual  
Spanish: limited professional

### SOFT SKILLS

Multidisciplinary mindset  
Goal oriented  
Communication  
Creativity

### INTERESTS

Freediving  
Road Trips  
Sci-fi Movies  
Classic Rock Music

### PROJECTS

#### Traffic Signal Control Optimization

Project aimed at optimizing time schedules of fixed-time traffic lights. The core algorithm is the intersection of genetic algorithms, machine learning model selection and unsupervised learning techniques. Real test case scenarios, tested via the SUMO traffic simulator, show successful results.

#### Reinforcement and Online Learning

Repository that serves as a playground for reinforcement and online learning concepts. The RL part covers from dynamic programming and Markov decision process to q-learning algorithm, both with tabular and RBF value function approximation, applied to the mountain car problem. The OL part covers multi-armed bandit type of problems and relevant algorithms like E-greedy and Exp3.

#### Deep Learning

Repository that covers pytorch implementations of deep learning fundamentals. It comprehends automatic differentiation, multilayer perceptron, gradient descent optimizers, convolutional neural networks, transfer learning and autoencoders. The implemented algorithms exploit real datasets and architectures like the MNIST dataset and the ResNet architecture.

#### Natural Language Processing for Spam Filtering

Real world deployed python application to analyze and categorize text messages into spam or ham categories. SQL database, data cleaning and Zalando's flair NLP library are at the core of this project. The optimized model shows high F1 score.

#### Evolution of Complexity

A Java implementation of evolutionary computation core concepts. The first part of the project implements a genetic algorithm, with mutation, selection and crossover operators, exploited to solve a toy problem. The second part of the project reimplements and extends an evolutionary computation model of biological bacteria growth.

#### Automated Negotiating Agents

Project about the design and java implementation of an autonomous negotiating agent built on the GENIUS framework. The agent negotiates with a single opponent in an environment with uncertain expected utility function. The agent implements a Boulware concession strategy and a Johnny Black opponent modelling to offer and accept bids close to both the Pareto frontier and Nash point. Results show that the agent is among the top performing ones.

#### Android Malware Analysis

Project based on porting TraceDroid from Android version 2.3.4 to Android 4.4. TraceDroid is a modified Android operating system that performs dynamic analysis of Android applications. This tool is extremely useful at tracing an app behavior and determine whether the analyzed code is malicious. The working ported system substantially extends apps compatibility.

### HARD SKILLS

#### Subjects

Algorithms | Data Structures  
Distributed Systems  
Evolutionary Computation  
Technical Writing  
Concurrency | Multithreading  
Software Modelling  
Machine Learning  
Deep Learning  
Multi-agent Systems  
Reinforcement Learning

#### Software

Java  
Python  
Linux  
C  
HTML | CSS  
Javascript  
SQL  
AWS SageMaker | Lambda  
Numpy | Pandas | Scikit-learn  
PyTorch