TOMMASO CAPECCHI

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EDUCATION

Bachelor's Degree in Computer Science | University of Florence
Academic Years: from 2015/2016 to 2018/2019
Expected graduation date: 04/2020

Relevant Coursework:
- Operative Systems (final grade 29/30; ECTS equivalent: A)
- Information Retrieval (final grade 28/30; ECTS equivalent: A)
- Statistics (final grade 28/30; ECTS equivalent: A)
- Computer Network (final grade 27/30; ECTS equivalent: A)
- Programming Methodology (final grade 25/30; ECTS equivalent: B)
- Databases & Information Systems (final grades 25/30; ECTS equivalent: B)
- Programming (final grade 24/30; ECTS equivalent: B)
- Algorithms & Data Structures (final grade 22/30; ECTS equivalent: B)

High School (UK equivalent: A level) | Liceo Linguistico ITCS-PACINI
Academic Years: from 2009/2010 to 2013/2014

WORKING EXPERIENCIES

Department of Mathmatics & Computer Science | University of Florence
Research Intern, 08/2019-01/2020

- Joined the *Resilient Computing Lab* working on a research project mainly focused on Cybersecurity and Machine Learning algorithms.
- Learnt the main concepts of Machine Learning and many techniques applied to Anomaly Detection; several unsupervised algorithms were studied and implemented: their performances in detecting anomalies inside a computer network were compared and evaluated.
- Results of these studies will be published and discussed as final thesis, with title: "Comparison between Unsupervised Algorithms for Anomaly-Based Intrusion Detection".

Publications

Parts of the studies that characterized my final thesis were also included in the following research paper:

- Tommaso Zoppi, Andrea Ceccarelli, Tommaso Capecchi, Andrea Bondavalli, *"Unsupervised Anomaly Detectors to Detect Intrusions in the Current Threat Landscape"*, ACM/IMS Transactions on Data Science, *currently under review*.

Decathlon | Prato, Italy
Selling Assistant, 11/2014 – 05/2015
- Learnt how to engage and communicate with clients, developing several organizations skills.

TECHNICAL PROJECTS

Computer Network | Github • 06/2019

• Built a Computer Network in Java which simulates the distribution of virtual resources in a client-server architecture.
• Strong network protocols knowledge were learnt.
• Programming language: Java.

Process Scheduler & Client-Server | Github • 01/2018

• Implementation and usage of Inter Process Communication between clients and servers using Socket API and System Process API in UNIX.
• Strong knowledge of System Design were learnt.
• Programming language: C.

MIPS 32 Processor Simulation | Github • 01/2018

• Built a program that implements low level operations on MIPS 32 CPU architecture.
• Learnt deeply how to manage CPU registers, boolean circuits, instruction cycle, and how to load and store resources in the stack and the heap memory.
• Strong knowledge of Computer Architecture were learnt.
• Programming language: Assembly.

Stratego Game | Github • 09/2016

• Built of a winning strategy for Stratego Game.
• An AI algorithm was implemented capable to play by itself.
• Strong programming skills and OOP paradigm were learnt.
• Programming language: Java

Data Structure: Generic Trees | Github • 06/2016

• Built a program capable of create and modify the data structure Generic Tree.
• Implementation of Breadth-First-Search and Depth-First-Search algorithms.
• Strong knowledge of OOP and Generics concepts were learnt.
• Programming Language: Java.

LANGUAGES

• Italian (Native) • English (B2/C1) • Spanish (Basic, level A2) • French (Basic, level A2)

ABILITIES

• Excellent Programming Skills developed during my University courses in: Java, C, Swift, Assembly MIPS, SQL, Latex, Shell, Unix, Python.
• Excellent knowledge of Eclipse, Xcode, Matlab, Atom, Linux, MySQL.
• Excellent knowledge of Object Oriented Programming and Functional Programming.
• Excellent knowledge of Microsoft Office: Word, Excel, Power Point.

MAIN INTERESTS

• Technology • Computer Science • Artificial Intelligence • Machine Learning • Cybersecurity
• Financial Economics • Blockchain • Music • Cooking • Cycling