LUCA MULTAZZU

+41 0767095522 ◇ Zurich
lcmultazzu@gmail.com ◇ PORTFOLIO:https://lucamul.github.io/

EDUCATION

Master's degree in Cyber Security with Minor in Data Management Systems, ETH of Zurich Expected Summer 2023
Relevant Coursework: Big Data, Applied Cryptography, Security Engineering, Advanced Systems Lab, Algorithms Lab, Advanced Encryption Schemes, Current Topics in Cryptography Seminar.
Current GPA: 5.32/6

Exchange Semester during the Master's, EPFL, Lausanne Sept 2022 - Feb 2023
Relevant Coursework: Machine Learning, Concurrent Algorithms, Distributed Information Systems, Formal Verification, Experience Design.

Bachelor's degree in Computer Engineering, Polytechnic of Turin 2018 - 2021
Relevant Coursework: Computer Science, Algorithms and Programming, Object Oriented Programming, Computer Architecture, Introduction to Databases, Operating Systems, Computer Networks.
Final Grade: 110/110

IT SKILLS

Programming	Python, Java, C, C++, Scala, parallel computing, distributed computing, Web programming
Data Management	Apache Spark, MapReduce, Neo4j, GraphQL, SQL, Big Data, Machine Learning, HTable
Cyber Security	Secure Coding, Security Standard, Cryptography, Risk Analysis
Other Skills	Markup languages, operating systems, computer networks, photoshop, figma.

PROJECTS

Portfolio. For more info on all the projects go to https://lucamul.github.io/

Optimal Distributed Read Atomic Transactions. Worked on the development and testing of a new Read Atomic algorithm for distributed transactions over a key-value store.

Road Segmentation Classifier. This project worked on the coding of a neural network classifier to classify patches of satellite images as road or not road. The classifier obtained an F1 score of 0.894 and an accuracy of 0.944 on the test data.

Higgs' Boson Classifier. This project aimed at the development of a logistic regression classifier to classify data from CERN as Higgs boson or background particle. The classifier obtained an F1 score of 0.712 and an accuracy of 0.788 on the test data.

Event Platform. In this project we created a web platform which is secure and correctly manages all acess rights while allowing users to create and edit events. We did so on two different frameworks, ActionGUI, and GraphQL (using GraphQL Shield and MongoDB).

NOCS-optimal Distributed Causally Consistent Transactions and Beyond. This project is still in development and aims at the design and implementation of a new Causal Consistency algorithm for distributed databases.

Verifying Compiler for Rattlesnake. In this project we worked to add verifying capabilities to an already exhisting language called Rattlesnake, all the coding was done in Scala.

STM implementation based on TL2. This project consisted on developing, in C++, a transactional memory library, based on the TL2 algorithm.

Coffix. This was an Experience Design project, in conjunction with architecture student, we worked on developing the idea of Repair Cafes, a place where people can repair their broken objects while meeting new friends, and a platform for them called Coffix.

FNNMF: A fast implementation of non-negative matrix factorization Use techniques such as vector instructions, blocking for cache and registers etc. to achieve significant speed-up on NNMF. We ended up getting up to 42x speed-up.

TEACHING EXPERIENCE

Teacher for the Math Summer Courses July 2022
Istituto Tecnico Industriale Angioy *Sassari, Italy*

- Taught 2 classes of 10 students each. I had to prepare my students for an exam that they needed to pass to avoid repeating the year.

LEADERSHIP

- Head of the International Prefects for Whanganui High School (New Zealand) in 2017 (during my year as an exchange student)
- Academic Prefect for Whanganui High School (New Zealand) in 2017 (during my year as an exchange student)
- High School class representative in Italy in 2018

EXCHANGE STUDENT YEAR

Exchange Student in New Zealand during High School *2016-2017, Whanganui*
I spent a year in New Zealand as an exchange student at Whanganui High School.