FABIO PIRAS

Computer Engineer
Cybersecurity specialization

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SUMMARY

Computer engineer student in University of Pisa. During my academic journey I acquired a solid knowledge base in different areas of computer engineering such as: algorithms, artificial intelligence, cybersecurity, software development. I am a creative, motivated and diligent person who loves to work in a team to reach common results. I love having a positive impact on the community.

SKILLS

Languages: C/C++, Java, Python, PHP.

Back-end: MySQL, MongoDB, Neo4j, Redis.

Technologies: Linux, Git, Omnet++, Burp, Spring, Docker.

Soft skills: Cybersecurity, Critical thinking, Teamwork, Project design & implementation, Problem-solving, Adaptability.

CURRENT PROJECT

- Go
- Erlang
- Tomcat Servers

GoLang, integration of Go service with Erlang - 03/2024 - 09/2024
The main idea is to build a go service deployed on a Tomcat server and to integrate some functionalities with Erlang with a function driven approach.

- Python
- BPMN
- Trello
- UML

SecurePOS - 11/2023 - 04/2024
SecurePos is a *fully comprehensive* project, starting from user specifications, the objective is to build a functional factory of micro-services to classify POS transaction and signal the malevolent ones. The project has a strong focus on the whole road-map with milestones and meetings with the client (the professor). In addition the project is done in such way to be module independent to make future addition of features and changes easier to implement.

PAST PROJECTS

- Python
- Tenserflow

CNN for violence recognition in CCTV footage - 11/2023 - 02/2024
The objective of the project is to build from scratch a CNN that receives as input CCTV footage and classifies it into two main categories: violence and non violence presence. The study starts with a very simple CNN and follows it up with a continuous improvement of performances and hyper-parameter tuning and test with both 2D and 3D CNN. In addition a comparison will be made with pre-trained neural network such as Resnet with the following case study.

- Php
- MySQL
- Burp
- Kali Linux

SecureBookSellingWebsite - 11/2023 - 01/2024 **https://github.com/Albran99/SecureBookWebSite**
Secure Book store is a fully functional site with a focus on cybersecurity, resistant to SQL injection, cross site scripting, privilege escalation and others malicious activity. It does implement helpful user such as: account recovery, password change and the possibility to download the purchased book, all of this in a secure manner. The site will then be tested by cybersecurity expert at the University of Pisa.

- Java
- MongoDb
- Neo4j
- Spring
- Thymeleaf

Rotten Movies - 12/2022 - 01/2023 **gitlab.com/fp99/rottenmovies**
RottenMovies is an online platform dedicated to film reviews, drawing inspiration from the renowned Rotten Tomatoes. The users have the opportunity to rate and review a wide range of movies, with the user base divided into two categories: critics and top critics. Critics have the option to follow top critics, ensuring they stay up-to-date with their latest opinions and insights.

- C++
- Omnetpp
- Excel

Epidemic Broadcast - 01/2023 - 02/2023 **github.com/Albran99/EpidemicBroadcast**
Epidemic Broadcast is an epidemic simulation built using C++ in Omnetpp. The simulation represents a network of interconnected nodes, where each node has peer-to-peer connections. Within this network, each node has a probability of transmitting an "infection message" to its neighboring nodes. The objective of the simulation is to identify the optimal configuration that maximizes the spread of the epidemic.

- C++
- OpenSSL

SecureBank - 06/2023 - 07/2023 **github.com/Albran99/SecureBank**
SecureBank is an application designed to implement the transfer of messages and data between a client and a bank server in a secure way. The protocol designed is resistant to both active attacks like replay and MITM and subquantum passive ones. The protocol uses both symmetric and asymmetric key encryption. For simplicity purposes, it is assumed that both parties already know the other's public key

- C++
- Cuda
- uProf
- Nsight

BitonicSort - 04/2023 - 06/2023 **github.com/Albran99/BitonicSort**

BitonicSort is a study of the bitonic sort algorithm and focuses on enhancing its performance on specific hardware. The project analyzes how the utilization of multithreading and GPU accelerators can bring a significant speedup, resulting in the ability to sort an array of 2Gb in less than 15 seconds specifically on an Nvidia Tesla T4.

- Java
- APKTool
- Virus total
- MobSf
- Kali Linux

Malware analysis - 08/2023 - 09/2023 **github.com/Albran99/MalwareAnalysis**

In this project I was tasked with analyzing two set of malware, the first one is of Iranian origin and it steals sms messages to allegedly steal OTP code, the second one is an adult themed app that tracks the user, subscribe him to paid SMS services and could also act as ransomware. The last one in particular had an extensive use of code obfuscation

- C
- Linux file system

MessagincAppC - 05/2022 - 07/2022 **github.com/Albran99/MessagingAppC**

MessagingAppC is a project that involves implementing a messaging app using C sockets. The architecture consists of a central server that serves as a mediator, facilitating user communication and updating their status to notify them if other users are offline. Users can exchange messages, transfer files, and create group chats within the app, the server keeps track of the messages sent but not yet received by users.

EDUCATION

09/2022-x/2024 **Master's Degree Computer Engineering Cybersecurity curriculum** **University of Pisa**

Pisa's Computer Engineering Master's, specializing in cybersecurity, deepens knowledge in threat analysis and defense strategies. Practical projects and collaboration with experts ensure graduates are well-prepared for dynamic cybersecurity challenges without leaving out other topics such as: AI, software development and performance analysis

09/2018-09/2022 **Bachelor's Degree Computer Engineering** **University of Pisa**

Pisa's computer engineering program is a dynamic blend of theory and hands-on experience. Students explore algorithms, software, and hardware, guided by top-notch faculty. The focus on practical skills through projects and internships prepares graduates for the fast-paced world of computer engineering.

LANGUAGES

English - B2, **Italian** - native