europass

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Professional sector

Blockchain developer, Bitcoin educator, Senior software engineer

Work experiences

jun 2023 - today

Blockchain consultant: development and training

Activities

The current services offered are:

- development of decentralized applications or smart contracts on Ethereum;
- development of decentralized applications or smart contracts on Polygon;
- development of applications based on the MERN stack;
- development of applications based on the PERN stack;
- training on Bitcoin;
- training on Lightning Network;
- training on Solidity language;
- training on the development and deployment of decentralized applications;
- general consultancy on the above topics.

For more information, please visit the website marcomigliorini.com.

Sector: Engineering

Company: Freelance

may 2022 - may 2023

Gap year

I decided to take a gap year to deepen and train on two new areas of interest: permissionless blockchains and the Austrian economy. Of the first, I was fascinated by the idea behind it and I want to make it my job, while the other was a consequence of having come into contact with Bitcoin.

Wanting to roughly summarize this period, I can say that I have:

- traveled and lived almost all the time between Spain and Portugal;
- learned a new language (Spanish);
- attended a series of online courses dedicated to blockchain and the development of smart contracts (the more technical ones are listed in the **Education and training** section);
- studied many books on both blockchain and economic topics (most relevant to the work I want to do are: The Bitcoin Standard, The Fiat Standard, Mastering Bitcoin, Mastering the Lightning Network, Mastering Ethereum, Solidity Programming Essentials, Token Economy, Blockchain: technology and business applications);
- followed various webinars, seminars and conferences on the subject, both in Italian and in English;
- started writing a book on Bitcoin with the aim of publishing it by the end of 2023;
- started writing Bitcoin-related articles for MokaByte magazine (link to articles);
- VAT registered as a *Blockchain consultant: development and trainer*.

oct 2019 - apr 2022

Senior software engineer

Activities and responsibilities

Collaboration in the re-engineering of the corporate management system of public mobility networks

(trains, trams, buses), to transform it from a suite of standalone applications to one of web applications. The stack used to achieve this evolution is based on: GWT for the frontend, Spring/Java 8 for the backend, Hibernate/Oracle for the database part, RESTful API towards external GeoServers for the cartographic part. Use of the Agile Scrum methodology, as a system for coordinating and monitoring the progress of software development, and Git/Jenkins/Docker/OracleCloud, as a pipeline for CI/CD.
Active participation in corporate internal training events. In particular, I promoted as speaker the static analysis of the software quality through SonarLint and the use of MyBatis to interact with databases that make massive use of stored procedures and structured queries.
Direct involvement in the start-up, testing and commissioning phases of the company SonarQube system, to centralize the monitoring of the code quality of the various company development lines and standardize the static error analysis rules.

Sector: Engineering

Company: M.A.I.O.R. S.p.A. - Via Atto Vannucci, 7, 50143 Florence

feb 2018 - sept 2019

Senior software engineer

Activities and responsibilities: Collaboration in the various phases of the corporate backend lifecycle divided into a core part, common to all, and various verticalizations, specialized on individual customers. The common part is composed of a microservices architecture developed in java on the OSGi framework (Apache Felix), in which integrations of new functions are mainly performed, in compliance with the principle of single responsibility (SPR), and exposure of new services through RESTful APIs.Verticalizations are instead monolithics developed according to the J2EE standard (EJB, JMS, MDB, ...) and distributed on JBoss/WebSphere For the latter, reengineering is on the agenda both to exploit the new core features and to increase the decoupling and cohesion of the various sub-parts with a view to future evolution towards microservices (functional decoupling).
Communication between backend modules takes place asynchronously when possible, using a message broker to guarantee its functioning, and is based on the exchange of data in JSON through HTTP calls. When exposing services to the frontends, a customized API Gateway is used which performs various tasks: routing execution, decoupling, round trip minimization, uniqueness of the authentication point (SSO/JWT). Since the database is partitioned among several applications, data consistency is guaranteed through the use of the SAGA pattern (Command/Orchestrator), which allows careful management of distributed transactions.
Given the nature of the service offered, towards institutes of credit operating 24/7, it is necessary to operate with a view to continuous delivery. To this end, the work process consists of the following phases: analysis of new requirements, sorting between the various modules, identification of individual tasks, development in test-driven development (TDD/JUnit), use of tools such as git, maven, jenkins , nexus and docker, to automate the entire release chain, from merging the software to deploying it in the desired environment.

Sector: IT and services

Company: Quid Informatica S.p.A. - Via Pratese, 162, 50019 Osmannoro (Florence)

aug 2016 - feb 2018

Software engineer

Activities and responsibilities: Collaboration in the development, testing and maintenance of the information system for the supervision and control of the tram products supplied by the company. The project consists of a backend based on a service-oriented multi-tier java architecture (SOA), created thanks to the use of the OSGi framework (Apache Felix) which guarantees the modularity of the individual components and their interoperability, and a csharp/javascript frontend representing the SCADA of the existing tram line, which acts as an HMI for plant management Re-engineering of the JPA (EclipseLink) model on which the aforementioned system is based: redefinition of the entities and related constraints to normalize the pre-existing database, adaptation of the relationships between the various classes and introduction of the cascade logic.
Implementation of the backend of the new company configurator of tram lines built on the Spring stack + Jax RS (Jersey) + JPA (Hibernate) + MySql capable of exposing all its functions to external users as REST services that exchange data in JSON format/ XML, so as to optimize the general performance of the product.
The main tools used in the work process are: the agile methodology for planning and managing the workflow, the java first methodologies and test-driven development (through the use of JUnit and JMock frameworks) for software development, pattern design for project quality and maintainability, systems such as git, maven and jenkins to automate versioning, build and continuous integration respectively.

Sector: Engineering

Company: Thales Italia S.p.A. - Via Lucchese, 33, 50019 Osmannoro (Florence)

mar 2014 - aug 2016

Software engineer

Activities and responsibilities: Reengineering of the company's supplementary pension system to transform the old website into a single page application (SPA). For this purpose, two independent systems were designed and implemented, capable of communicating with each other through light data structures, thus to minimize bandwidth consumption and response times.The first system is a javascript client representing the real SPA created with the Dojo Toolkit framework, to which the Zurb Foundation framework has been associated to obtain a responsive layout, while the other it consists of a java server built on the Spring stack + Jax RS

(Apache Wink) + Jax WS + MyBatis + Oracle DB capable of responding in JSON / XML format to REST calls coming from the client and processing them correctly depending on the type of resource requested. During the development process, tools such as Swagger UI and NodeJS were used respectively to standardize the service interface and create a light stub of the server.
Collaboration in the development, testing and maintenance of multi-tiered web based applications in J2EE based on: Spring framework as systems backbone, Struts framework + JSP / JSF framework + RichFaces for request routing, business logic and presentation, Hibernate / iBatis framework for data persistence and Oracle / DB2 database for their management.

Sector: Insurance

Company: Unipol Sai Assicurazioni S.p.A. - Via Lorenzo Il Magnifico 1, 50129 Florence

jan 2014 - jul 2014

Junior software engineer (external collaboration)

Activities and responsibilities: Direct responsibility for the start-up, testing and commissioning phases of the company RFID system, distributed between the production plant, automated warehouse and various points of sale, created to optimize internal logistics and have product traceability.

Sector: Pharmaceutical chemist

Company: Officina Profumo Farmaceutica di Santa Maria Novella S.p.A. - Via R. Giuliani 143/A, 50141 Florence

sept 2011 - dec 2013

Junior software engineer

Activities and responsibilities: Collaboration on various 3-level web based projects in a java environment structured as follows: frontend divided into a web portal based on a JSF framework for users of the exposed services and an on-demand executable management system based on a corporate framework for administrators of the latter, backend with all the business logic necessary for the application including management of data persistence, and database structured according to customer needs.
View of the entire life cycle of the developed software, from analysis to maintenance , with main tasks in the design, implementation, testing and documentation phases.
Customer management in the advanced stages of the order, and subsequently, for the optimization of the product upon delivery and any evolutions to be planned.

Sector: IT and services

Company: ISED Ingegneria dei sistemi S.p.A. - Via Lorenzo Il Magnifico 10, 50129 Florence

Education and training

jul 2023 - jul 2023

LPI Linux Essentials

Main topics and skills acquired: This course is divided into the following modules:

- virtualized environment (VirtualBox) vs real installation;
- main distributions of Linus, and distinctive characteristics of the same;
- basic introduction to using the command line (CLI);
- more on the command line: search, archive and editor;
- OS basics: processes, logs, system routing and networking;
- users and groups: typologies and management;
- files and directories: security and permissions.

Hours: 8 theoretical

Sector: Operating systems

Company: Udemy

mar 2023 - mar 2023

Smart contract security 101: from beginner to intermediate

Main topics and skills acquired: In this course the following attacks against smart contracts are introduced and analyzed: access control, unencrypted data, overflow, contracts interactions, reentrancy, tx.origin, denial of service, upgradeability, weak randomness and replay attacks. Subsequently, for each attack, it is explained how to modify the smart contract code to neutralize it.
Finally, two real-life cases are analysed: The Dao and The King of Ether.

Hours: 10 theoretical

Sector: Web3 & blockchain development

Company: EatTheBlocks

feb 2023 - feb 2023

Build on Polygon: from Ethereum to Polygon

Main topics and skills acquired: This short course explains how to bring a smart contract developed for the Etherum blockchain to the

Main topics and skills acquired: Polygon blockchain: any changes to the smart contract, deploy on the test network, deploy on the mainnet.

Hours: 4 theoretical + 1 practical

Sector: Web3 & blockchain development

Company: EatTheBlocks

nov 2022 - dec 2022

Full stack development with React.JS & Node.JS

Main topics and skills acquired: This course is divided into the following modules:

- introduction to version control systems: Git workflow;
- introduction to frontend technologies: HTML, CSS, Responsive layouts, Flexbox;
- introduction to javascript: ES6 and beyond;
- introduction to React.js: basic template creation using Node.js, JSX, app structure analysis;
- components, states and events in React.js: how to pass data between components;
- introduction to Axios: how to make asynchronous calls and retrieve data via API;
- introduction to RESTful API: CRUD for React.js application;
- conditional rendering, client side validation and routing;
- introduction to Node.js and Express.js: from asynchronous frontend calls to backend routing;
- NoSQL (MongoDB) or SQL (PostgreSQL) database connection to Node.js;
- server side input validation and error handling;
- develop and deploy a complex app: CI/CD, GitHub and Netlify.

Hours: 40 theoretical + 20 practical

Sector: Online training

Company: Geeks for geeks

aug 2022 - oct 2022

6 figures blockchain developer

Main topics and skills acquired: This course is divided into the following modules:

- basics of the Ethereum blockchain, with a focus on address types and gas;
- decentralized applications, or dApps, what they are and how they are structured;
- introduction to Remix, Ganache, Truffle, Metamask, Infura and Etherscan;
- Solidity language: smart contract structure, variable types, constructor, function declaration, visibility of variables and functions, modifiers, control structures, arrays, mappings, structs, events, interaction between smart contracts, paying and receiving functions, inheritance, error handling;
- "Multisig Wallet" mini-project: creation of the smart contract, automated tests via Truffle, frontend development and integration, deployment in testnet and mainnet;
- “DEX ERC20” project: creation of smart contracts, automated tests via Truffle, frontend development and integration.

Hours: 25 theoretical + 25 practical

Sector: Web3 & blockchain development

Company: EatTheBlocks

jun 2022 - jun 2022

Introduction to Python

Main topics and skills acquired: This course aims to make an introduction to the Python programming language. The topics addressed concern the syntax and semantics of the language: types of variables, strings, conditional statements, lists, cyclic statements, tuples, sets, dictionaries, functions, lambda expressions, error handling, modules, decorators, OOP. All enriched with examples and exercises.

Hours: 15 theoretical + 10 practical

Sector: Online training

Company: Udemy

jan 2022 - apr 2022

30 dApps in 30 days

Main topics and skills acquired: This course aims to increase the student's skills in relation to the development of decentralized applications, accompanying him in a 30-day path for analysis, development and testing. Every day a dApp of increasing difficulty is presented and a series of information is provided to complete the missing parts, normally focused on the development of the smart contract, its tests or the associated frontend.
Some examples of the dApps addressed are: Hello World, Read Data from Blockchain, Write Data on Blockchain, Simple Wallet, String manipulation, Voting, Lottery, ERC20 token, ERC721 token, DEX Arbitrage, DAO.

Hours: 50 theoretical + 30 practical

Sector: Web3 & blockchain development

Company: EatTheBlocks

aug 2019 - oct 2019 Blockchain specialization

Main topics and skills acquired: This specialization introduces blockchain, a revolutionary technology that enables peer-to-peer transfer of digital assets without any intermediaries, and is predicted to be just as impactful as the Internet. More specifically, it prepares learners to program on the Ethereum blockchain. The four courses provide learners with (i) an understanding and working knowledge of foundational blockchain concepts, (ii) a skill set for designing and implementing smart contracts, (iii) methods for developing decentralized applications on the blockchain, and (iv) information about the ongoing specific industry-wide blockchain frameworks. The specialization covers a range of essential topics, from the cryptographic underpinnings of blockchain technology to enabling decentralized applications on a private Ethereum blockchain platform. It is ideal for programmers and designers involved in developing and implementing blockchain applications, and anyone who is interested in understanding its potential.

Applied learning project: Learners will apply the concepts covered in the courses to deploy an instance of a blockchain and carry out peer-to-peer transactions, program and test smart contracts using Solidity language, and analyze, design and code a blockchain-based solution for decentralized application.

Hours: 50 theoretical + 20 practical

Sector: Blockchain & Decentralized application

Company: Buffalo University on Coursera

may 2011 - may 2011 Simatic S7-200 PLC basic and advanced course

Main topics and skills acquired: Introduction to PLCs, structure and operation of the S7-200 CPU, STEP 7 development environment for programming, program structuring and processing, available set of instructions, subroutines, interrupt handling, MPI communication, use of high-speed counters , analog inputs/outputs, debugging, hints on the implementation of a PID controller.

Hours: 35 theoretical + 10 practical

Sector: Industrial automation

Company: Siemens S.p.A. - Via dell'Innovazione 3, 20126 Milan

dec 2010 - jan 2011 License to practice as an Engineer

Vote: 115/120

Exam topic: Industrial automation problem.

Institution: University of Florence - Facoltà d'Ingegneria - Via Santa Marta 3, 50100 Florence

oct 1998 - jul 2010 Degree in Computer Engineering (with specialization in controls and industrial automation systems)

Vote: 106/110

Thesis: Simultaneous tracking of a group of objects using non-linear filtering

Main exams: Computer science fundamentals I and II (C and C++), Processing systems (Java), Databases (MySQL, PHP, HTML, CSS), Automatic controls I and II (analysis and synthesis of linear and nonlinear), Process control (Fuzzy and PID controllers, Siemens PLC with Step7, FPGA), Adaptive systems (deterministic and stochastic LQ controllers, adaptive controllers), Pattern identification and data analysis (Wiener and Kalman filters).

Institution: University of Florence - Facoltà d'Ingegneria - Via Santa Marta 3, 50100 Florence

sept 1993 - jul 1998 Certificate of Industrial Electrotechnical Expert

Vote: 60/60

Main topics: Automatic controls, electrical engineering and electronics

Institution: Istituto Tecnico Industriale Statale 'G. Ferraris' - Via R. Sanzio 187, 50053 Empoli (Florence)

Language skills

Native language: Italian

Other languges

	Comprehension		Speaking		Writing
	Listening	Reading	Iteraction	Pronunciation	
English	*B1*	*B1*	*A2*	*A2*	*A2*
Spanish	*B1*	*B1*	*A2*	*A2*	*A2*

Levels: A1/2 basic level - B1/2 intermediate level - C1/2 advanced level
Common european framework of reference for languages

IT skills

Blockchain	Bitcoin, Lightning Network, Ethereum, Polygon, BSC
Smart contract	Solidity, Web3.js, Remix, Truffle, Ganache, Hardhat, OpenZeppelin, Metamask, Infura, IPFS
Frontend	HTML, CSS, JavaScript, jQuery, React.js, Styled Component, Postman, JSP, JSF
Backend	Java, Python, Node.js, C, C++, VS Code, Eclipse, IntelliJ, JasperReport
Database	MongeDB, Mongoose, PostgreSQL, MySQL, Oracle, SQL Server, Hibernate, MyBatis
Stack	MERN, PERN, Spring, J2EE, MVC
Altro	Agile, Linux, OOP, RESTful API, Git, GitHub, Jenkins, Docker, RabbitMQ