

Emna HAMMAMI

Junior Junior Software Engineer

SUMMARY

- Proven experience designing and implementing secure, Byzantine-fault-tolerant cross-chain NFT bridging protocols and decentralized DAOs on Ethereum and Massa blockchains.
- Skilled in full-stack development with Java Spring Boot, Angular, WebSocket/STOMP, and microservices architectures, delivering real-time applications and security audits.
- Strong background in information systems security audits, smart contract auditing, and cryptography, complemented by certifications in blockchain security and ethical hacking.
- Proficient with modern development tools and methodologies including UML, Git, REST APIs, pBFT consensus, and containerization with Docker, ensuring robust and well-tested solutions.

TECHNICAL SKILLS

Main Technical Skills	Solidity, TypeScript
Programming Languages	Java, Kotlin, Python, Solidity, TypeScript
Android Libraries and Tools	Kotlin
Go Libraries and Tools	Libp2p
JavaScript Frameworks	Vue.js
Security	AWS Security Groups
Data Analysis and Visualization Technologies	Power BI
Databases & Management Systems / ORM	MongoDB, SQL
UI Frameworks, Libraries, and Browsers	Tailwind CSS
Amazon Web Services	AWS Security Groups
UI/UX/Wireframing	Affinity
Blockchain and Decentralized Software	Avalanche, Bitcoin Blockchain, Cardano, Cryptography, DAO, DeFi, Foundry, Polkadot, Smart Contract, Sui
Virtualization, Containers and Orchestration	Docker

Version Control	Git
Mail / Network Protocols / Data transfer	JWT, WebSockets
SDK / API and Integrations	JWT
Operating Systems	Linux
Methodologies, Paradigms and Patterns	microservices, UML
QA, Test Automation, Security	Postman
Platforms	Power Automate, SharePoint
Other Technical Skills	Consensus Algorithms, Identity governance, LaTeX, PBFT

WORK EXPERIENCE

Alumni Ambassador - UZH Blockchain Center, University of Zurich (UZH Deep Dive into Blockchain Alumni Community Representation)

Duration: Jan. 2026 - Present

Summary: Selected to represent the alumni community and promote the 2026 summer school edition of the Deep Dive into Blockchain program at the University of Zurich.

Responsibilities:

- Represent the alumni community of the Deep Dive into Blockchain summer school.
- Promote the 2026 edition of the summer school to prospective participants and stakeholders.

Personal Project Developer (Shipment Tracking Application)

Duration: Apr. 2026

Summary: Designed and built a full-stack real-time shipment tracking system providing live status updates to users, enhancing logistics transparency and efficiency.

Responsibilities:

- Developed RESTful APIs using Spring Boot for backend services.
- Implemented Angular frontend for user interface.
- Enabled real-time status updates via WebSocket and STOMP protocols.

Technologies: Spring Boot, Angular, WebSocket, STOMP, Java, TypeScript, Tailwind CSS

Blockchain Researcher - UZH Blockchain Center, University of Zurich (Cross-Chain Impact Credits Protocol)

Duration: Jul. 2025 (3 weeks)

Summary: Co-architected a dual-ledger community-contribution tracking protocol deployed on Hedera and Cardano, focusing on cross-chain state synchronization and tokenized incentive contracts to enhance decentralized community engagement.

Responsibilities:

- Analyzed blockchain architectures and scalability of leading protocols.



- Studied economic incentive designs in decentralized protocols including DeFi, governance models, and tokenomics.
- Designed the cross-chain state-sync layer and co-developed tokenized incentive smart contracts.

Technologies: Ethereum, Bitcoin, Consensus, Smart Contracts, Cryptography, Cryptocurrencies, Tokenomics, DeFi, Governance, Cardano, DFINITY, BSV, Polkadot, LUKSO, Avalanche, Sui

Blockchain Engineer Intern - DAR BLOCKCHAIN (Cross-Chain NFT Bridging Protocol)

Duration: Jan. 2025 - Jun. 2025

Summary: Designed and implemented a secure cross-chain bridging protocol enabling NFT transfers between Ethereum and Massa blockchains, enhancing interoperability and security in NFT ecosystems.

Responsibilities:

- Architected a three-layer cross-chain system involving Ethereum smart contracts, a Node.js off-chain relayer, and Massa blockchain contracts.
- Developed and deployed Solidity smart contracts with comprehensive security testing.
- Audited contracts for security vulnerabilities and implemented a pBFT-inspired consensus layer for Byzantine fault tolerance.
- Produced UML architecture documentation and a full security audit report.

Technologies: Ethereum, Solidity, Massa, AssemblyScript, TypeScript, Node.js, Libp2p, pBFT, Foundry, WebSocket, Git, UML

Blockchain Engineering Intern - DAR BLOCKCHAIN (Charitable DAO and Decentralized Crowdfunding Platform)

Duration: Jul. 2024 - Aug. 2024

Summary: Developed a transparent charitable DAO on Ethereum and a decentralized crowdfunding platform on Massa blockchain to automate fund distribution and milestone-based funding verification.

Responsibilities:

- Designed smart contracts automating fund distribution, emergency reserves, and contributor rewards for the DAO.
- Built smart contracts for crowdfunding proposals, token locking, milestone verification, and real-time impact tracking dashboard.

Technologies: Ethereum, Massa, Solidity, AssemblyScript, TypeScript, DAO, Foundry, Anvil, Git

Software Engineering Intern - SMART BOX SARL (Medical Data Management Application for Epileptic Patients)

Duration: Jul. 2023 - Aug. 2023

Summary: Contributed to the development of a medical data management application aimed at improving care for epileptic patients by enhancing data accessibility and management.

Responsibilities:

- Developed frontend components using Vue.js 3.
- Tested REST APIs with Postman to ensure reliability.
- Containerized the full stack application using Docker for deployment and scalability.

Technologies: Vue.js 3, TypeScript, SQL, Docker, Git, Postman



Student Project Developer - ENET'Com (Signal Tracker - Telecom Quality Monitor)

Duration: Jan. 2024 - Apr. 2024

Summary: Designed and developed a telecom signal quality tracking system with a microservices architecture and an intelligent chatbot to provide real-time operator interaction and monitoring.

Responsibilities:

- Implemented microservices using Spring Boot and Kotlin.
- Developed intelligent chatbot for real-time interaction.
- Managed data storage with MongoDB and maintained version control with Git.
- Created UML diagrams for system design documentation.

Technologies: Spring Boot, Kotlin, Microservices, Java, MongoDB, Python, Git, UML

Student Project Developer - ENET'Com (Information Systems Security Audit)

Duration: Sept. 2024 - Dec. 2024

Summary: Simulated a full information system and conducted an organizational and technical security audit in compliance with ANCS national norms, producing a formal audit report with remediation recommendations.

Responsibilities:

- Performed organizational and technical security audit of an information system.
- Produced formal audit report including remediation recommendations.

Student Project Developer - ENET'Com (OAuth 2.0 Security Protocol Analysis)

Duration: Oct. 2024

Summary:

- Analyzed and compared traditional authentication methods with OAuth 2
- 0 security flows and developed a step-by-step implementation tutorial using Spring Boot and Spring Security

Responsibilities:

- Conducted security analysis of OAuth 2.0 protocol.
- Developed implementation tutorial demonstrating OAuth 2.0 with Spring Boot and Spring Security.

Technologies: Spring Boot, Spring Security, Java

EDUCATION

• **Telecommunications Engineering**

National School of Electronics and Telecommunications of Sfax - ENET'Com
2022 – 2025

• **Preparatory Cycle - Physics & Chemistry**

Preparatory Institute for Engineering Studies of Sfax - IPEIS
2020 – 2022



CERTIFICATION

- **Ethical Hacker - Cisco**
In Progress
- **DevNet Associate - Cisco**
2024
- **Blockchain Security - Coursera**
2024
- **Certification of Completion for an Associate Hedera Developer Assessment - The Hashgraph Association**
2023
- **Full-Stack Development - CSF formation**
2023

