Hamza Karabağ

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PROFILE

22 years old developer with 3 years of experience in blockchain systems, backend development, high performance systems and Rust, Typescript, Solidity, and Cairo languages. Interested in cryptography and mathematics associated with it.

EDUCATION

Bachelor of Computer Science   09/2020 – present
Istanbul Technical University

AWARDS

Scaling Ethereum Hackathon Winner   19/04/2023
Ethereum Global
- Developed OPClave, an Optimism Stack that powers biometric enabled transactions using secp256r1 curve and Secure Enclave.
- Received Optimism "Hack the Stack" bounty

LayerZero Best NFT Project & Coinbase Best Team   20/03/2022
Avalanche Barcelona Hackathon
- Developed multi-chain NFT bridge that is demonstrated on Polygon and Avalanche networks.
- Code of the project can be found at https://github.com/itublockchain/octobridge-onchain 🔗

Secureum RACE program
- I finished the first RACE program of Secureum which is an audit bootcamp at 13th place of 400 participants. I learned a lot about EVM internals and smart contract vulnerabilities during the program.

OPEN SOURCE PROJECTS

shovel
NFT Indexer for Starknet written in Rust.
It is written when Starknet was painfully slow and had a concurrent worker model that'd work in reasonable times even when block times are too slow. After the network got faster it works even better.

bitcoin-rs
Bitcoin implementation in Rust
It is the implementation of Bitcoin protocol written in Rust. This is a project for me to learn internals of blockchains and p2p networks in general, which is an in-progress codebase I add every time I read "Programming Bitcoin" book by Jimmy Song.

PROFESSIONAL EXPERIENCE

Fullstack Developer   06/2022 – present
Ethylene   International
- Developed Clave wallet (https://twitter.com/opclave 🔗), a modular account abstraction wallet powered by EIP4337.
- Successfully implemented the initial version of the Secure Enclave library, coordinating efforts between frontend and backend teams.
- Designed parts of Clave's backend architecture and implemented cryptographic verification mechanisms including its TEE module.

Developer Lead   07/2022 – present
Fibrous Finance   International
- Developed the backend of Fibrous Finance (https://fibrous.finance 🔗), the first DEX aggregator on the Starknet blockchain.
- Designed and implemented the route optimization algorithm and router contracts using Typescript and Cairo.
- Created Rust and Typescript SDKs to enhance the usability of the router API.

- Spearheaded the development of *StarkRocks*, the highest volume NFT on the Starknet, which provides fee discount on the Fibrous application.

Developer Lead   01/2022 – 04/2023
The Mindstone   Istanbul, TR
- Engineered the backend and blockchain components of the game "Hunters on Chain" on Polygon (https://boomland.io 🔗).
- Collaborated closely with the Unity team to design a blockchain architecture that minimizes trust on the game studio and prioritizes asset ownership.
- Orchestrated collaborations with Magic Eden and Sequence to enhance the game's ecosystem.

Junior Auditor   08/2022 – 10/2022
*Nethermind*   London, UK
- Conducted contract audits for in-house products as part of the Nethermind team.

Developer Evangelist   05/2021 – 08/2022
Reach Blockchain Language   Boston, MA
- Expertise in Reach Language (https://reach.sh 🔗), a smart contract programming language for Algorand and Ethereum blockchains.
- Developed educational content and conducted workshops to facilitate understanding of Reach among new developers.
- Assisted +1000 developers and 4 companies in their Algorand development projects.

Backend Developer   08/2021 – 10/2021
The Mindstone   Istanbul, TR
- Engineered the backend of the NFT Prime marketplace (https://nftprime.com 🔗) and designed the blockchain architecture.
- Guided a frontend team with no blockchain experience to successfully develop the website for the application.