Filippo Costa

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+39 348 9843382
Dubai, UAE; flexible working hours

experience

Sovereign Labs, Sr. Protocol Engineer *Jun. 2023 - present*
Co-designed a modular Rust framework & SDK for building ZK rollups.
- Introduced testing, OpenTelemetry monitoring, documentation, DevEx, security tools (MIRI, AFL), and CI best practices.
- Wrote tools to (1) automatically test example code blocks in README files, (2) run crate pre-release checks in CI, and (3) reduce project compilation times.
- Authored a scalable L2 block explorer backend with REST and GraphQL APIs, PostgreSQL and SQLx.

Edge & Node (prev. The Graph), Rust Software Engineer *Feb. 2022 - Jun. 2023*
Developed security patches, new features, and internal tools for Graph Node.
- Lead work on Graphix, a data inconsistency monitoring and rootcausing tool for The Graph Network and its data.
- Authored, documented, and owned release engineering processes for several major products.
- Co-lead cloud offering deprecation in favor of network queries, which resulted in cloud costs down by ~10% and targeting ~80% by Q4 2023, and increase in query fees and network rewards.

Spacemesh, Core Protocol Developer *Jul. 2021 - Feb. 2022*
Helped develop a novel WebAssembly-based smart contract execution engine in Go, C, and Rust.
- Identified and fixed 10s of consensus-threatening determinism bugs.
- Assisted R&D with iterative prototyping and protocol improvement proposals.

Bitwyre, Part-Time Contractor, Rust Software Developer *Dec. 2020 - Jul. 2021*
Implemented Financial Information eXchange (FIX) APIs upon my open-source project FerrumFIX.
- Adopted TDD to implement highly technical protocols for low-latency systems.
- Programmed asynchronous network code leveraging TLS, OpenSSL, UDP multicasting, code generation.

Efficiam, Intern, Rust Software Developer *Summer 2019*
Improved reliability of the market order matching engine and increased test coverage by over 40%. Introduced event-sourcing architecture and remodelled the Limit Order Book implementation after the QuantCup winner entry.

education

University of Pisa, Computer Science courses *Sept. 2019 - Jun. 2023*
Dropped out to join Edge & Node. Average grade: 28.35/30 ~ 94%.
Relevant courses: Algorithms & Data Structures, Formal Logic cum laude, Programming I (C89) & II (OCaml, Java) cum laude, Computer Architecture (ARMv7), Operating Systems, others.

LeadTheFuture.tech, Apprenticeship *Sept. 2021 - Aug. 2022*

miscellanea & projects
- FerrumFIX, a MIT-licensed Rust implementation of the FIX protocol.
- Zuloid, a competitive chess engine written in C99 with advanced optimizations e.g. null-move pruning and horizon effect reduction techniques.
- Knuth reward check of $2.56. *April 2016*

relevant skills
- Proficient in Rust, Go, C, Elixir, Scala; comfortable with new languages.
- Strong focus on low-latency, high-throughput distributed systems.
- Familiar with
  - GNU/Linux, Docker, Git, CI/CD, IaC (Terraform, Ansible), AWS & GCP main products.
  - PostgreSQL, Cassandra/ScyllaDB, SQLite, Redis, RocksDB.