

# Filippo Costa

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## experience

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| <b>Sovereign Labs</b> , Sr. Protocol Engineer  | <i>Jun. 2023 - present</i>   |
| Co-designed a modular Rust <a href="#">framework</a> & SDK for building ZK rollups.  |                              |
| <ul style="list-style-type: none"><li>Introduced testing, OpenTelemetry monitoring, documentation, DevEx, security tools (MIRI, AFL), and CI best practices.</li><li>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.</li><li>Authored a scalable L2 block explorer backend with REST and GraphQL APIs, PostgreSQL and SQLx.</li></ul>                 |                              |
| <b>Edge &amp; Node (prev. The Graph)</b> , Rust Software Engineer  | <i>Feb. 2022 - Jun. 2023</i> |
| Developed security patches, new features, and internal tools for <a href="#">Graph Node</a> .  |                              |
| <ul style="list-style-type: none"><li>Lead work on Graphix, a data inconsistency monitoring and rootcausing tool for The Graph Network and its data.</li><li>Authored, documented, and owned release engineering processes for several major products.</li><li>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.</li></ul> |                              |
| <b>Spacemesh</b> , Core Protocol Developer   | <i>Jul. 2021 - Feb. 2022</i> |
| Helped develop a novel WebAssembly-based smart contract execution engine in Go, C, and Rust.   |                              |
| <ul style="list-style-type: none"><li>Identified and fixed 10s of consensus-threatening determinism bugs.</li><li>Assisted R&amp;D with iterative prototyping and protocol improvement proposals.</li></ul>  |                              |
| <b>Bitwyre</b> , Part-Time Contractor, Rust Software Developer   | <i>Dec. 2020 - Jul. 2021</i> |
| Implemented Financial Information eXchange (FIX) APIs upon my open-source project <a href="#">FerrumFIX</a> .  |                              |
| <ul style="list-style-type: none"><li>Adopted TDD to implement highly technical protocols for low-latency systems.</li><li>Programmed asynchronous network code leveraging TLS, OpenSSL, UDP multicasting, code generation.</li></ul>  |                              |
| <b>Efficiam</b> , Intern, Rust Software Developer  | <i>Summer 2019</i>           |
| 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

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| <b>University of Pisa</b> , Computer Science courses   | <i>Sept. 2019 - Feb. 2022</i> |
| Dropped out to join Edge & Node. Average grade: 28.35/30 ~ 94%.<br>Relevant courses: Algorithms & Data Structures, Formal Logic cum laude, Programming I (C89) & II (OCaml, Java) cum laude, Computer Architecture (ARMv7), Operating Systems, others. |                               |

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| <b>LeadTheFuture.tech</b> , Apprenticeship | <i>Sept. 2021 - Aug. 2022</i> |
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## miscellanea & projects

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| <ul style="list-style-type: none"><li><a href="#">FerrumFIX</a>, a MIT-licensed Rust implementation of the FIX protocol.</li><li><a href="#">Zuloid</a>, a competitive chess engine written in C99 with advanced optimizations e.g. null-move pruning and horizon effect reduction techniques.</li><li>Knuth reward check of \$2.56.</li></ul> | <i>April 2016</i> |
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## 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.