Davide Spataro

Head of Technology

Personal Info

14 February 1990

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About me

I am a curious and passionate lead software engineer with a Ph.D. in Computer Science and 7+ years of experience building high-stakes financial systems. I have led engineering teams, with a strong bias toward results, clean architecture, and shipping things that last. I am an active StackOverflow user and an avid reader of technical books and articles. I feel naturally inclined to work in a team, but I am also capable of tackling and solving complex problems autonomously. I strive for continuous improvement.

I spent most of my early years taking piano lessons until my addiction to classical/jazz music gave way to the undivided study of Computer Science. When I am not coding I am most likely either fighting gravity on a race bike, or lifting weights in the gym. During the summer of 2021, I cycled solo and unsupported from the North to the South of Italy ($\approx$ 1100km). I drink a lot of coffee.

Languages

Italian

English

Dutch

(*)[Skill scale: 0 (Awareness) to 10 (Expert).]

Key skills

Fundamentals	Algorithms and data structures, TDD, OOP, Design Patterns, SQL
C/C++20	Meta-programming, boost, google test/mock, threading, GPGPU, CUDA, OpenCL, MPI
Build and Version Control	`git`, `GNU make`, `CMake`
OS and Scripting	Linux, Bash, Python
Blockchain	Smart contracts, Ethereum/solidity, Solana, EOS
API development	Typescript, API design

Experience

since 2022 Head of Technology — CHINTAI — **Remote (Italy)**

- Lead a team of 6. Design and supervise the entire backend and blockchain systems - owning architecture decisions, and delivery.
- Built an automated market-maker for the CHEX token across 4 exchanges handling >100k$/day.
- Engineered a fully on-chain secondary exchange with an on-chain orderbook, now powering the secondary market on the all white-label deployments of the Chintai platform for customers.
- Designed a mint/burn bridge for the CHEX token spanning EOS $\leftrightarrow$ EVMs $\leftrightarrow$ Solana. Processing > 3B CHEX (2.1B$) in volume.
- Overhauled the Nodeos EOS node software delivering a fault-tolerant history tool that stores all on-chain actions to PostgreSQL.

2020-2022 Software Engineer — flatex DEGIRO — **Amsterdam, The Netherlands**

- Leading a team responsible for the core modern C++ distributed trading codebase.
- Achieved a 2x improvement in order ingestion by redesigning business-critical caching modules in the core C++ trading system.
- Integrated real-time NASDAQ market data into the platform; the pipeline continues to power risk management and order lifecycle in the trading platform today.

2018-2020 Software Design Engineer — ASML — Eindhoven, The Netherlands

- Implemented C/C++-11 core software for overlay optimization.
- Benchmarked and optimised metrology code, achieving a $1.66\times$ speedup - directly improving machine throughput.
- Championed TDD adoption and drove the introduction of CI/CD (Jenkins) in the metrology codebase, resulting in measurably fewer production bug tickets.
- Hardened critical legacy C/C++ code paths that had been brittle in production, improving overall system stability.

2016-2017 Ph.D. Research Visiting Student — Universities of Warwick and Edinburgh

- Investigated parallel and distributed visualization strategies for exascale simulations (VELaSSCo project, Edinburgh).
- Developed a multi-GPU rendering prototype for the VELaSSCo project (University of Edinburgh).
- Implemented an efficient tridiagonal system solver within the OPS framework using Intel SIMD (SSE) intrinsics for numerical kernels (University of Warwick).

2014-2017 Ph.D. Teaching Assistant — University of Calabria, Italy

- Teaching assistant delivering a 6-month course in event programming to ≈ 100 students, guiding them to build fully functional 3D games in Java from scratch.

Education

2014-2018 **Ph.D. in Mathematics and Computer Science** — University of Calabria, Italy

Thesis: *Seamless acceleration of numerical regular grid methods on many-core systems.*

- Designed a DSL aimed at both efficient and quick implementation of CA and FDM on multi-core/nodes/accelearators systems.
- Implemented a family of `C/C++/CUDA/OpenCL/MPI` libraries

2011-2014 M.Sc. **magna cum laude** in Computer Science — University of Calabria, Italy

Thesis: *Accelerating the new* `SCIARA-fv3` *numerical model by different GPGPU strategies.*

- Achieved up to 200x speedups for a computationally intensive fluid-dynamic lava flow model, enabling real-time civil defence risk map generation.
- Implemented a real-time 3D `OpenGL` interactive UI for the model

Publications

Full list: https://dblp.org/pid/144/4308.html

2018 A first multi-GPU/multi-node implementation of the open computing abstraction layer
Journal of Computational Science, Volume 32, March 2019, Pages 115-124

2018 The Open Computing Abstraction Layer for Parallel Complex Systems Modeling on Many-Core Systems
Journal of Parallel and Distributed Computing, Volume 121, 53-70,

2016 Multi-Agent System with Multiple Group Modelling for Bird Flocking on GPU
Proceedings of The 2016 International Conference on Parallel, Distributed and Network-Based Processing (PDP), February 17-19 2016, Crete, Greece

2015 Efficient Lava Flows Simulations with OpenCL: A preliminary application for Civil Defence Purposes
Proceedings of The 10^{th} International Conference on P2P, Parallel, Grid, Cloud and Internet Computing, November 4-6, 2015, Krakow, Poland