

KONSTANTINOS CHASIALIS

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Education

École Polytechnique Fédérale de Lausanne (EPFL)

2023 – 2026

Master of Science in Computer Science (Systems specialization), GPA: 5.6/6.0

Lausanne, Switzerland

National and Kapodistrian University of Athens

2016 – 2021

Bachelor of Science in Computer Science, GPA: 9.2/10.0

Athens, Greece

Experience

Digital Wave Finance AG

Jul 2026 – Present

Software Engineer, Low Latency Trading

Zug, Switzerland

- Develop low-latency, high-throughput exchange connectivity for venues such as Binance: market data ingestion and private streams (order, wallet and order book updates).
- Optimize the hot path through profiling and benchmarking: minimize cache misses, cross-core communication, data sharing and thread contention, and speed up packet parsing.

Oracle – MySQL HeatWave

Feb 2025 – Aug 2025

Software Engineer Intern

Zürich, Switzerland

- Developed a data-fetch cache: up to **67%** speedup and **83%** less network overhead on TPC-H and TPC-DS.
- Implemented wait-free thread synchronization and optimistic concurrency control for consistent access to shared state.

Athena Research Center

Aug 2021 – Sep 2024

Research Associate

Athens, Greece

- Researched and developed a query optimizer for SQL queries with user-defined functions using tracing JIT compilation and operator fusion; achieved up to **27x** speedup over Spark, SQLite and PostgreSQL.

Nokia

Oct 2020 – Jul 2021

Software Engineer (Working Student)

Athens, Greece

- Developed a diagnostic tool to automatically trace test failures and identify faulty commits in CI/CD pipelines, which cut the time needed to identify and debug failures.

Projects

Fastbook | C++23 | in progress 🔄

- Designed a low-latency market-data pipeline that reconstructs per-instrument order books; sharded the feed across core-pinned threads via lock-free SPSC queues and used io_uring for network data.
- Implemented a lock-free, run-based size-class allocator with thread-local caches and huge-page backing, plus object pools, to keep heap allocation off the hot path.

Redis Server | Rust 🔄

- Implemented a Redis server from scratch: strings, lists, streams, transactions, replication, persistence, key expiry, pub/sub and authentication, on an async event loop with Tokio channels and a RESP3 parser.

Fault-Tolerant Network Protocols for Distributed Systems | C++ 🔄

- Implemented 3 fault-tolerant protocols for reliable communication over UDP on a multi-threaded epoll event loop.

Nex2Chat - Decentralized Social Network | Go 🔄

- Fully decentralized P2P social network: a Chord DHT for storage and Paxos for state management, no central servers.

Publications

Optimizing UDF Queries in SQL Data Engines (Full Paper) | *EDBT 2026* | Athena Research Center 🌐

The Effectiveness of Compression for GPU-Accelerated Queries on Out-of-Memory Datasets (Workshop Paper) | *DaMon 2025* | EPFL – DIAS Lab 🌐

QFusor: A UDF Optimizer Plugin for SQL Databases (Demo Paper) | *ICDE 2024* | Athena Research Center | **Best Demo Paper Award** 🌐

Predicting Query Execution Time for JIT Compiled Database Engines (Abstract Paper) | *CIDR 2023* | EPFL – DIAS Lab 🌐

Technical Skills

Languages: C, C++, Python, Rust, Go, SQL, Bash, Assembly (x86-64, LLVM IR, MIPS)

Systems & Tooling: Linux, macOS, Windows, Git, CMake, GNU autotools, Docker, SSH, CI/CD, TCP/UDP

Debugging & Profiling: GDB, LLDB, Valgrind, perf, strace/ltrace, Wireshark