

Francesco ZOFFOLI

Software engineer, public speaker and book author with experience in designing, implementing and growing distributed systems. Expert in C++, Python and the technologies used in the modern back-end stack, passionate about performant, efficient, reliable and simple software, has a demonstrated history of leading and growing teams.

CONTACTS

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WORK EXPERIENCE

Present FACEBOOK INC., London
APR 2020 *Senior Software Engineer - Tech Lead*

I worked as the technical lead of a team of 8 developing the alerting system, which is used to monitor issues happening in Facebook, Whatsapp, Instagram and all the internal systems. The highly-available system receives multiple billions of requests a day from across all data centers. The system is critical for detecting, preventing and resolving issues inside all of the Facebook products.

As technical lead, I set the vision of the alerting product for the team, I coordinate external relationships with partner teams and grow the team through mentoring and hiring. I also helped coordinate department wide initiatives, grow the scope of the team, including defining the vision and strategy for a new product related to events, and bring a change in the culture of the team around reliability excellence.

My contributions in the team included

- drive the re-architecture of the existing system for alerting into a highly available and reliable design, enabling the system to scale horizontally, growing 100x with the same hardware utilization.
- significantly improve the reliability of the existing system, including fixing several sources of mayor outages by reworking the shard management of the system and validating the fixes through regular failure injection in production (SLI from 99.0% to 99.7%), reducing the latency on the reverse query lookup code by 5x (p95 from 60s to 10s), reducing the memory usage (bottleneck) of our storage system by 30%, implementing a self-adaptive system which identifies and rejects problematic user queries at runtime
- contributing across multiple teams, driving the design and the implementation of key features for the integration of our system with powerful workflows, including a new system for enforcing the data quality of the generated alerts and a new API for rich and efficient querying of alerts

Main technologies: C++, Python, React, MySQL, Thrift, Internal IaaS (similar to AWS/Azure offerings).

MAR 2020 BLOOMBERG LP, London
AUG 2016 *Software Engineer*

I worked in the Sharing Framework team, which provides to the Application Teams in Bloomberg a set of services to enable their users to share, access and edit content with users or groups in their network. The system, in the form of services and UI components, is heavily used by some of the most used functionalities of the Bloomberg Terminal. I worked in an agile team, owning the full stack of the framework.

- I developed the product by working with the business and engineering stakeholders, collaborating cross-team to lead the integration efforts for key features including immutable shares, real time notifications, the permissioning system.
- I architected, designed and implemented systems that handle multi-million requests per day, ensuring their ability to scale and be resilient to failures.
- I was part of the group coordinating *Software Development Life Cycle* improvements for my area (200+ engineers): I especially cared about improving testing, monitoring, and integrating CI&CD.
- I mentored new team members and interns: I won the *Best mentor of the year* award out of 150+ mentors.
- I provided training to my team, including C++ modern features, cmake, docker.
- I was involved across the organization to contribute to the advancement of Bloomberg wide internal infrastructure, including reducing the time needed by the build system, contributing libraries to ease testing and submitted fixes and enhancements to the internal C++ standard library.

Main technologies: C++, Python, SQL, Redis, RabbitMQ, Kafka, Javascript, Docker.

PUBLICATIONS & TALKS

- TALK** **How to Use Dependency Injection to Write Maintainable Software**
CppCon 2022
Show several techniques and tools to use dependency injection in large C++ systems. Provides direct, actionable suggestions, with concrete examples in C++20, and dives into less common, yet important to cover, cases.
[Abstract](#) | [Video](#)
- TALK** **Automatically Process Your Operations in Bulk With Coroutines**
CppEurope 2022 | CppCon 2021 | C++ London May 2020
The talk covers how coroutines can be leveraged to automatically perform operations in bulk. It starts from explaining how coroutines work in C++20 and building on top of that, with interactive visualizations, it teaches how to use them to perform bulk operations.
[Abstract](#) | [Video](#)
- BOOK** **C++ Fundamentals - Francesco Zoffoli, Antonio Mallia**
Packt Publishing, 2019, ISBN: 9781789801491
The book covers the most fundamental aspects of C++ for application development. It starts with the concepts of types, functions and classes, providing best practices for their use. It then introduces the topic of templates, inheritance and memory management, making sure to also teach the many algorithms and data structures in the standard library. Particular attention is given to modern features introduced in the recent standards C++14 and C++17. It sold several thousands copies and had very positive reviews.
[Publisher Website](#)

EDUCATION

- APR 2016 Master of Science in COMPUTER ENGINEERING, **Politecnico di Milano**, Milan
OCT 2013 Score: 110/110 *cum laude*
FEB 2016 Internship Researcher at **National University of Singapore**, Singapore
OCT 2015 For the Master thesis
JUN 2014 Exchange Student at **Case Western Reserve University**, Cleveland, Ohio, USA
JAN 2014 GPA: 4.0/4.0
SEPT 2013 Bachelor of Science in COMPUTER ENGINEERING, **Politecnico di Milano**, Milan
SEPT 2010 Score: 99/110

SKILLS

Programming Languages	<i>Expert:</i> C++ <i>Proficient:</i> PYTHON, JAVA
Technologies	RDBMS(MySql, PostgreSQL, DB2), Redis, RabbitMQ, Kafka, RPC (Thrift), Docker, Jenkins, React
Hard Skills	software desing & architecture, testing, distributed systems, API design
Soft Skills	communication, project management, mentoring, teamwork leadership

PERSONAL PROJECTS

Resilient	An expressive C++ library for handling failures	GitHub Project
Jenetic Algorithm	An multi-threaded genetic algorithm library written in Java	GitHub Project
LoLScraper	A Python library for scraping Riot Games public REST API	GitHub Project
CollisionCore	A Java and Android collision library for 2D pixel perfect collision	GitHub Project
TeamComp.net	A Django website to display aggregate data over the performances of teams in the online game League of Legends. Leverages PostgreSQL, Memcache, Cloudnit	
Full Project List	Visit my GitHub , Bitbucket or LinkedIn accounts	

LANGUAGES

ENGLISH	Fluent
ITALIAN	Mother tongue

TECH INTERESTS

Working collaboratively, best practices in software engineering, mentoring and teaching, programming languages, open source, distributed systems, development methodologies

INTERESTS

Skiing, kite surfing, workouts, cheesemaking, bread baking, opera