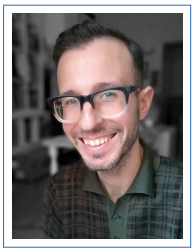
Gerard Bosch

Software Engineer,
Freelancer/Indep. Contractor

US/EU Worldwide remote
gerard.bosch@gmail.com
linkedin.com/in/gerard-bosch
github.com/gerardbosch
gerardbosch.xyz



"The purpose of abstraction is not to be vague, but to create a new semantic level in which one can be absolutely precise."
—Edsger W. Dijkstra

🧑 This CV is live! Click here to ensure you access the most **up-to-date** version 🧑

[*Read the one-page résumé version at* resume.gerardbosch.xyz]

Summary

Enthusiast about Functional Programming, software engineering/craftsmanship, clean code, architectural/design patterns and programming languages theory.

My background is mostly about designing/implementing backend systems and APIs. I have good analysis skills and can break down requirements well and transform that into code.

Really concerned about the code itself, its readability, expressiveness, precision and conciseness. Continuous improvement advocate & continuous refactor and code reuse as a mantra. Accidental-complexity fighter. Curious by nature, proactive and self-taught. Like learning 😃, love crafting ❤️.

Presentations

2020 Functional Programming super-short intro
2018 A technical introduction to Blockchain technology

Professional Experience

2022

(Break) / Software Engineer, *Self employed*, Barcelona

- I set up my own company to provide software engineering services as a contractor.
- Algorithmic trading, research, design & implementation of safety mechanisms for loss control, as well as key metrics collection/reporting using DDD & Hexagonal arch.
- High level design of a multi-level affiliation system with referral fee distribution.
- Took a break from industry to learn about finances, markets and investments.

Keywords: *MQL, C++.*

2021
2022

Software Engineer, *N26 Bank*, Barcelona

Joined the fees team, which is in charge of designing and operating a new fee platform intended to be the new-standardized way of charging company-wide banking fees.

- That implied not only the creation of a dedicated microservice, also re-purposing and refactoring of existent ones along with APIs, as well as DB migrations.
- Implement upcoming business use cases as per new fee creation or regulatory compliance.
- Being a bank, testing is one of the most important and cared matters (pyramid testing, contract testing, regression, TDD,...).

Keywords: *Kotlin, Spring Boot, Microservices, EDA, Kafka, REST, Postgres, Datadog, ELK, Kibana, AWS, Hexagonal, Clean Architecture, Domain Driven Design.*

2016
2021

Senior Software Engineer, *GFT IT Consulting*, Lleida/Barcelona

🎯 *Successfully delivered a large and complex regulatory banking project to provide external, permission-based access to banking APIs, ensuring on-time completion. Then, I was called to contribute building a new bank architecture for high-concurrency, based on acquired know-how.*

PROJECT HIGHLIGHTS (most relevant projects only):

- *Banc Sabadell*: Middleware Architecture (2020)

  Role: Software Engineer

  Start redefining from scratch a whole new framework and development environment based on MsA, Spring Boot, API First, Event Driven, DDD, Hexagonal and so forth.

- *Banc Sabadell*: PSD2 & APIfication (2018–2020)

  Role: Tech Lead (development team)

  • Design and implement the APIs for the European regulatory project *Payments Service Directive 2*/PSD2 (*Strong Customer Authentication*/SCA, Open Banking, Fintech integration,…); leading the first approach to API exposition for the *Banc Sabadell*. I worked both on the API definition side and the Architecture side, defining and implementing architectural components for the Microservices Architecture, where I was established as the technical lead for the development team until post-production.

  • Defined and set up an *API-First* approach with OpenAPI and API contracts generation (interfaces + DTO) with CI integration, making API definition agnostic and decoupled from its implementation.

- *Bankinter*: Microservice architecture (2017)

  Role: Developer

  Contribute in the development of an architecture for Bankinter based on MsA (Micro Services Architecture) with Java 8 and Spring Boot/Cloud. The built Architecture provides the pre-configured components: from security, logging, audit,… to cryptography; to allow developers to easily get started implementing microservices with not much Spring background required.

Keywords: *Spring, Java, Vavr, FP, OpenShift, ELK, Kibana, OpenAPI, API-First, Blockchain.*

2014
2016

Software Engineer, *ICG Software*, Torrefarrera, Lleida

Senior developer in charge of mobile applications for retail.

- Port a whole Android retail selling application to Windows Phone platform due to customer demands. In the way, learn both Android and WP frameworks.
- Build from scratch a new application for warehouse and inventory management; featuring integrated in-app barcode scanner through phone's camera, Android object database, and dual online/offline working mode.
- Research and use of cutting-edge technologies and libraries (Android data binding, Realm databases, Gson parser, Retrofit…).
- Architectural and design patterns implementation.

Keywords: Java, C#/.NET, Mobile apps, Android, Windows Phone, Realm, REST.

2011
2013

Researcher/developer, *Artificial Intelligence Research Institute (IIIA)-Spanish National Research Council (CSIC)*, Bellaterra

Hired for the research project Innpacto-2011 (Spanish Science and Innovation Ministry), *NEWMATICA: Intelligent and Energy Efficient Advanced System for Vacuum Waste Collection* (IPT-2011-1496-310000). In collaboration with University of Lleida.

- Research on artificial intelligence algorithms and machine learning.
- Design and implementation of a simulator, modelling of real plants topology and operation. Experimentation running bulk simulations in a cluster and automatic processing and representation of results.
- Implementation of algorithms based on *Approximate Dynamic Programming* (Reinforcement Learning) in order to optimize operational plans of waste collecting plants.

Keywords: Approximate Dynamic Programming, ADP, Discrete Event Simulation, DES, Integer Linear Programming, ILP, modelling, data collection, AI, research, planning, optimization, Python.

2010
2011

Systems/comms operations, *Information Systems and Communications Area, University of Lleida*, Lleida

- Setting up and deployment of Open-Exchange system (*Open Source*) covering the need of a corporate *Groupware* for the university staff. Set up, deployment, integration and maintenance of the service. Integration of the system with the corporate mobile phones.
- Setting up of an open source system for the management of name servers (DNS) in the university.
- Installation and management of GNU/Linux servers and virtual machines.

Keywords: Linux, virtualization, servers, DNS, networking, groupware.

Technical Skills

Programming Languages Kotlin, Scala, Java, Bash, Haskell, Python, Perl, SQL.

Interest Areas Functional Programming, Unison lang, Effect Systems, ZIO, Kyo,... Big/Fast Data & Streaming, DLTs/ Blockchain & Web3, Event-Driven Architectures, Artificial Intelligence, WebAssembly.

Development Methodologies FP patterns, GoF design patterns, SOLID, Clean Code, Hexagonal/ Clean Architecture, 12-Factor, ADTs, Programming with types, Railway Oriented Prog., Agile development, SCRUM, Domain Driven Design, TDD.

Others Cloud-Native, AWS, Git, Maven/ Gradle/sbt, JGitVer, Docker, OpenShift, Devcontainers, Testcontainers, DevOps, GitHub, GitLab, Cloudflare, LaTeX, Linux, Nix, Microservices, Cloud Native, OpenAPI, AsyncAPI, API first, oAuth.

Courses and certifications

2020 **Big Data Foundations**, *IBM Cognitive Class*, Course badge

2020 **Hadoop Foundations**, *IBM Cognitive Class*, Course badge

2020 **Spark**, *IBM Cognitive Class*, Course badge

2020 **Big Data Foundations (level 2)**, *IBM Cognitive Class*, Course badge

2018 **Serverless Data Analysis with Google BigQuery and Cloud Dataflow**, *Coursera*, Course accomplishment

2018 **Leveraging Unstructured Data with Cloud Dataproc on Google Cloud Platform**, *Coursera*, Course accomplishment

2018 **Google Cloud Platform Big Data and Machine Learning Fundamentals**, *Coursera*, Course accomplishment

Conference Attendance

2020–2021 Several online conferences, such as **JLove, Scala Love in the City, Haskell Love,...**, *online*

2019 **API Days**, *Paris*

2018 **API Days**, *Paris*

2018 **Ethereum Community Conference**, *Paris*

2017 **JBcnConf**, *Java & JVM Conference*, Barcelona

Education

2011 **Master in Open Source Software Engineering**, *University of Lleida*, Lleida / *VIA University College* (Denmark)

2011 **IT Engineering Higher Degree**, *University of Lleida*, Lleida / *VIA University College* (Denmark)

2005–2010 **IT Engineering Bachelor**, *University of Lleida*, Lleida

Final Degree Dissertations

Master in Open Source Software Engineering

title *Setting up and deployment of Sauron system for DNS system management at University of Lleida.*

date 28–09–2011

advisor Dr. Carles Mateu Piñol, Department of Computer Science and Industrial Engineering, University of Lleida, Lleida.

description Setting up an open source system for the name servers (DNS) management of the university. Integration of several open source components together with an LDAP database into ISC BIND name server. Implementation, configuration, integration and deployment of that system in the university's production infrastructure.

Qualified *with honors.*

Dissertation » (Catalan + English full configuration guide)

Presentation » (English)

IT Engineering Bachelor

title *Implementation of Golay codes in SAGE.*

date 15–01–2010

advisor Dr. Ramiro Moreno Chiral, Department of Mathematics, University of Lleida, Lleida.

description Implementation of a kind of channel error correcting codes (ECC) inside mathematical Open Source Software package SAGE, which is built up in Python and just previously had a generic implementation for linear codes.

Qualified *with honors.*

Dissertation »

Presentation »

Languages

English Professional working proficiency
B2 CEFR (Common European Framework of Reference)

Catalan Native

Spanish Native

The current copy was last updated on September 4, 2024.
Check last version here