

# Guillem Marpons

## Software Engineer

43 years

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## Key skills

Teamwork, Creative Problem Solving, Interdisciplinary Collaboration, Team Training

Functional Programming, Agile Methodologies, Test-Driven Development, Property-Based Testing, Open Source Software, Academic Writing, Semantic Web

C, C++, Datalog, Eiffel,  
♥Haskell, Java, Prolog,  
Python, SQL

CI/CD (GitHub Actions, Travis),  
Docker, Git, GNU/Linux Sysadmin

Mongo DB, PostgreSQL

ER, OWL, UML/OCL

Peewee ORM, Boost C++ Libraries,  
WiringPi, LLVM/Clang

♥AsciiDoc,  
HTML/CSS, LaTeX

## Summary

Software developer with extensive experience in open source projects, research labs, small/medium sized companies and startups, and a strong foundation in computer science.

I am always willing to learn whatever it takes to solve a problem. Interested in any advances in programming and software engineering towards more rigorous software construction. Passionate about pure functional programming.

## Experience Highlights

The last seven years I have been a freelancer and have combined IT and document engineering consultancy, small development contracts, research for a personal project on collaborative writing, and volunteer activities.

**2020** *Open-source Project Leader, Developer:* [AsciiDoc-hs](#) | Freelance

- Won [a Tweag I/O Open Source Fellowship](#) in its first edition.
- Proposed and developed a new tool for processing [AsciiDoc](#): written in Haskell, scriptable, integrates with [Pandoc](#) to convert to any format.
- Explained [vision and design decisions](#) in Tweag's Blog.
- Defined the most concise, yet still executable, [grammar for AsciiDoc inlines](#) to date.

**2017–2020** *Document Engineer, Docs-as-code Evangelist* | Freelance

- Analyzed requirements, designed and implemented two sites for collaborative documentation: [Barcelona Digital Standards](#) and [Decidim](#).
- Decidim Team used an agile methodology.
- Trained city employees and Decidim contributors in AsciiDoc and Git.

**2017–2019** *FLOSS Consultant* | Freelance

- Authored report about free software use, procurement and development by the Barcelona City Council.
- Contributed to the [Barcelona Digital Standards](#).
- Trained city employees in open source procurement and development.

**2016–2017** *Developer* | [BMAT Music Innovators](#)

- Designed and developed reporting tools in Python and SQL.
- Used Scrum.
- Used my functional skills to replace complex Python code to chains of functional-style transformations in SQL, to facilitate prototyping.
- Taught UNIX command line and SQL to non-technical staff that needed to communicate effectively with technical clients.

**2007–2014** *Researcher and Developer* | Universidad Politécnica de Madrid

- ITEA Project **Global GCC**. Designed and developed a [prototype of a coding rule checker](#) for C and C++ (useful for implementing, e.g., [CERT Coding Standards](#)). Used Haskell, Prolog and C++. First as a GCC extension, then ported to LLVM/Clang.
- STREP Project **ProTest: Property-based Testing**. Developed an Erlang package for runtime monitoring (on-line testing).

# Languages

English, Spanish, Catalan

- Participated in other national research projects.
- [Presented in some academic conferences](#) and in the [GCC Developers Summit 2008](#).

**2009** *Formal Methods Consultant, Technical Trainer* | [Ineco-TIFSA](#)

- Participated in project **Transformers 2009: Transferring Formal Methods for Railway Systems**.
- Co-defined methodology for formal modeling and verification of railway systems (UML-OCL, Uppaal model checker).
- Trained employees of company Ineco-TIFSA on formal modeling.

**2006** *Researcher and Developer* | [LORIA](#) (France), [SmartEiffel](#) team

- Co-designed and co-implemented a mechanism for inheritance without sub-typing.
- Published [a paper about it](#).

**2004** *Teaching Assistant* | Universitat Politècnica de Catalunya

- Programming lessons in C for Industrial Engineering students.

**1998–2001** *Developer and Trainer* | Various companies and startups

- Taught Java to 60+ students of the Universitat Politècnica de Catalunya as an additional training program during vacations.
- Contributed to the development of a UML-based CASE tool, in Java.

## Education

**2002** Computer Engineering

*Universitat Politècnica de Catalunya, Barcelona, Spain*

**2010** Master of Advanced Studies in Software Engineering

*Universidad Politécnica de Madrid, Madrid, Spain*

## Seminars and Workshops

**2018** [Workshop on open source compliance for engineers \(FOSSology\) by the Linux Foundation](#)

*Id Law Partners and Universitat Pompeu Fabra, Barcelona, Spain*

**2009** [COST Action IC0701 Winter School: Verification of O-O Programs](#)

*Institute of Cybernetics, Tallinn, Estonia*

**2007** 2nd HiPEAC GCC Tutorial

*HiPEAC, Ghent, Belgium*

## Volunteer Experience

**2018–2020** *President of the Decidim Association*

The Decidim Association is the governance tool of the [Decidim project](#), the Free Open-Source participatory democracy for cities and organizations.

**2013** *Autonomous device for video projection in the street*

For the [Muestra de Cine de Lavapiés](#) (Lavapiés Film Show, Madrid).  
Used Arduino and Raspberry Pi for implementing energy consumption monitoring.