



# Daniel Bretón Suárez

## Contact data

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**Embedded software engineer** with experience in electronic design and product development.

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## Education

### University

**Master of Science in telecommunications engineering** conducted at [Universidad de Oviedo](#), Asturias, Spain.

- Strong focus on calculus and algebra. Including mathematical modeling and simulations.
- Electronic theory, simulations and prototyping for power electronics, control and communications.
- Software engineering foundations. OOP and embedded devices. Computational complexity, algorithms, computer science and network architecture.
- Signal theory and stochastic processes for telecommunications systems modeling.
- Strong focus on electromagnetism theory. Antenna prototyping.
- Project management, feasibility and viability analysis.
- Technical drawing and CAD basics.
- Classical physics and quantum theory basics.
- Basics on economics.

### Post-graduate education

| Subject                                  | Company                      | Year |
|--|------------------------------|------|
| Gitlab best practices                    | ZIV                          | 2021 |
| Cybersecurity at work                    | ZIV                          | 2021 |
| Doxygen best practices                   | ZIV                          | 2021 |
| Unitary tests and continuous integration | ZIV                          | 2020 |
| Static code analysis tools               | ZIV                          | 2020 |
| GNU Autotools                            | ZIV                          | 2019 |
| Introduction to PRIME                    | ZIV                          | 2019 |
| First Aids                               | Tecnalia                     | 2019 |
| Code style                               | Tecnalia                     | 2019 |
| Electrical risks and security            | Tecnalia                     | 2019 |
| Introduction to A.I                      | Stanford University (online) | 2019 |

### Languages

- **Spanish:** Native
- **English:** Advanced user. Cambridge English CEFR level C1

## Awards

### 2015 Third Prize Paper Award.

The Transportation Systems Committee of the IEEE Industry Applications Society.

For the manuscript co-authored with M. Arias, M.M. Hernando, U. Viscarret and Iñigo Gil, entitled "Equalization system for serially-connected battery cells based on the wave-trap concept" as presented at the 2014 Energy conversion Congress and Exposition, Pittsburgh, PA, USA.

## Profesional experience

| Role                                    | Company               | Duration            |
|---|-----------------------|---------------------|
| Embedded software engineer <sup>1</sup> | <b>ZIV Automation</b> | From september 2019 |
| Embedded software engineer              | <b>Tecnalia</b>       | 1 year              |
| HW/FW engineer                          | <b>Treelogic</b>      | 3 years             |
| Software engineer                       | <b>Capgemini</b>      | 6 months            |
| Power electronics researcher            | <b>Ikerlan</b>        | 1 year              |
| Sound technician                        | multiple locations    | -                   |

### Key skills

|                                     |                                   |
|-------------------------------------|-----------------------------------|
| Embedded programming languages      | C, C++, Assembly                  |
| Other programming languages         | Python, Matlab/Octave, Bash, Java |
| Distributed version control systems | Git, subversion                   |

### Software

|                     |  |
|---------------------|--|
| Static analysis     | Valgrind, GNU debugger, cppcheck                     |
| DevOps              | Gitlab, <b>Github</b> , Jenkins                      |
| Documentation       | Doxygen, markdown                                    |
| Distribution        | Software releases, changelogs                        |
| Product development | Bug reporting, continuous integration, unitary tests |

### Embedded

|                          |   |
|--------------------------|---|
| Architectures            | 8-bit ARM, 32-bit ARM, 8-bit PIC, 8051, embedded debian             |
| Low-level communications | SPI, UART, I2C  |
| MCU knowhow              | IRQs, low-power management, bus clocking, RTC                       |
| RF                       | RFID, Bluetooth, NB-IoT, 4G, 3G, 2G, LoRa, 868Mhz/433Mhz p2p radios |

### Electronics

|                  |   |
|------------------|---|
| Analysis         | Theoretical analysis, simulations using SPICE modeling or Matlab              |
| Design           | Schematics and PCB  |
| Basics           | Chip soldering, multimeter, laboratory equipment knowhow, electrical security |
| Signal debugging | Oscilloscope, multi-protocol decoders   |

### Product development

|                      |   |
|----------------------|---|
| Project management   | Schedule, milestones, activities, deliverables    |
| Long-lasting devices | Aging tests, defective analysis, patches          |
| Manufacturing        | Manufacturing instructions, integration, training |

### Office basics

|                        |   |
|------------------------|---|
| Operative systems      | Windows, linux (debian based), virtual machines |
| Networking             | ssh, remote desktop                             |
| Microsoft office suite | Word, Excel, Power point                        |

## Highlighted projects

More detailed information available at my [personal portfolio](#).

### Foggy radar

|                |   |
|----------------|---|
| <b>Company</b> | <b>Treelogic</b>  |
| Client         | Ministry of development of Spain  |
| Description    | A technological solution to virtualize drivers visibility on foggy conditions |
| Technologies   | <b>Radar, smart radio, traffic lights</b>                                     |
| Role           | Hardware & firmware engineer, project manager                                 |
| Years          | 2016 - 2019   |

### Robots for kids

|                |  |
|----------------|--|
| <b>Company</b> | <b>Treelogic</b>   |
| Client         | Adele Robots, Edelvives                                    |
| Description    | A consumer electronic device for educating kids at schools |
| Technologies   | <b>Robotics, consumer electronics</b>                      |
| Role           | Hardware engineer  |
| Years          | 2018 - 2019  |

### Smart meters I

|                |   |
|----------------|---|
| <b>Company</b> | <b>Tecnalia</b>   |
| Client         | ZIV, Endesa   |
| Description    | A embedded software development on a smart meter for the spanish market |
| Technologies   | <b>Metering, smart grids, meters and more</b>                           |
| Role           | Firmware engineer   |
| Years          | 2019  |

### Smart meters II

|                |   |
|----------------|---|
| <b>Company</b> | <b>ZIV, Alfamar</b>   |
| Client         | Saudi Electricity Company   |
| Description    | A huge project on smart grids for the whole kingdom of Saudi Arabia |
| Technologies   | <b>Metering, smart grids, NB-IoT, DLMS, 2G, PRIME</b>               |
| Role           | Firmware engineer, <b>head of software</b>                          |
| Years          | Ongoing, started on 2019  |

## Interests

Music, hiking, running, engineering, physics, personal projects, homebrew beer, gastronomy, cultural events.

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This document is intended to be public, if you require further information like a phone number, please consider to use the contact methods listed above.

Last modification: 29/07/2021

Latest revision of this document can be found at:

- html responsive: <https://dabresua.github.io/>
- pdf: [https://github.com/dabresua/dabresua.github.io/raw/master/DBS\\_CV\\_remote.pdf](https://github.com/dabresua/dabresua.github.io/raw/master/DBS_CV_remote.pdf)

This document has been generated using markdown and pandoc, source code is available at <https://github.com/dabresua/dabresua.github.io>

**Checkout my GitHub personal repository**

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1. International experience on Saudi Arabia 2020.↩