

# César Alvernaz

SOFTWARE ENGINEER

Dublin, Ireland

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## Summary

I am a self-motivated and self-organized person that enjoys solving hard problems and understanding the deepest bits, with balanced attitude (passion vs pragmatism) advocating for open communication. Experienced in full project life cycle from design to implementation to integration with a focus on web applications and distributed systems. Appetite for new technologies, research, and prototyping. Nowadays my interests lean towards cloud native applications, reactive systems and scalability.

## Education

### U.A (Universidade de Aveiro)

M.SC. IN COMPUTER SCIENCE AND ENGINEERING

Aveiro, Portugal

2002 - 2007

### U.A (Universidade de Aveiro), UATEC

TECHNOLOGY-BASED ENTREPRENEURSHIP COURSE

Aveiro, Portugal

2006

## Skills

**Programming** C/C++, Java, Go, Javascript, Elixir, Python, Bash, HTML, CSS

**Cloud** Amazon EC2, Amazon DynamoDB, Amazon SQS, Amazon RDS, Amazon IAM, Amazon VPC, Azure Blob Storage, Azure Service Bus, Cassandra, Ceph RGW, Docker, Docker-Compose

**Technologies** Spring Framework, Sprint Reactive Framework, Spring Boot, Kafka, RabbitMQ, gRPC, Flatbuffers, MongoDB, Redis, CockroachDB, MySQL, Oracle, Netty, Postgres Asynchronous Driver, Vert.x

**Web** Gorilla/Mux, NodeJS, Play!Framework, VueJS, ExtJS, BackboneJS, ExpressJS, Mocha, Should.js, Nginx, Caddy, GraphQL

**Development Tools** Git, Gitlab, Jenkins, GoCD, Jira, Confluence, Trello

**Operation Tools** Kubernetes, DC/OS Mesosphere, Kibana, Sensu, ContainX, Elasticsearch, Logstash, FluentD, Prometheus, Grafana, Netdata, Depcon

## Experience

### PTC & PTC R&D

PRINCIPAL ENGINEER

Dublin, Ireland

Jul. 2018 - Present

- Working on building distributed systems and data processing pipelines.
- Design and document the integration architecture for edge systems and the storage backend for Thingworx Platform on the cloud.

### PTC & PTC R&D

SENIOR SOFTWARE ENGINEER

Dublin, Ireland

Mar. 2017 - Jun. 2018

- Design and development of a distributed storage system for 3D content, based on microservices and cloud environment, to support the IOT cloud platform Thingworx and Augmented Reality Thingworx Studio.
- Developed the deployment pipeline according to CD/CI good practices.

### FEXCO & Fexco Software Group

SENIOR SOFTWARE ENGINEER

Kerry, Ireland

Mar. 2014 - 2017

- Developed the next generation of a distributed service to support the operations for the Prizebonds company, based on Event Sourcing and CQRS architectural patterns, message passing and microservices.
- Developed the backoffice web application, customer workflows and reporting. Strong contribution on improving code testability and performance.
- Streamlined deployment process by improving integration tools using Docker and enhancing continuous delivery pipeline across the company software teams.
- Consulted regularly with customers on project status, proposals and technical issues.
- Responsible for prototyping a gateway API to expose internal services and monetized them. As part of the prototype, developed multiple services that supports the financial services, monitoring integration and documentation.
- Contributed to company-wide resource planning and hiring.

## Nokia Networks

SENIOR SOFTWARE ENGINEER

Aveiro, Portugal

Apr. 2012 - Feb. 2014

- Designed and developed an end-to-end solution for extraction, loading and reporting of PM measurements data for LTE and Mobile Broadband services. Identified and implemented loading strategies to improve performance and code testability.
- Started an internal initiative to hack on small projects experimenting new technologies and tools.

## Altice Labs

PRINCIPAL SOFTWARE ENGINEER

Aveiro, Portugal

Mar. 2009 - Mar. 2012

- Creator of Path Computation Element PCE-Based Architecture for future network management applications, enabling path computation with different algorithms and reducing dramatically path computation time.
- Modernization of scalable and integrated platform for access network management, service provision and fault management, operates over Nx64(PDH), ATM, SDH technologies. Refactored and tested, reducing the technical debt as improved performance and maintainability.

## Nokia Siemens Networks

SOFTWARE ENGINEER

Aveiro, Portugal

Sept. 2007 - Mar. 2009

- Designed and maintained a manager application for Automatically Switched Optical Networks, which is a component of Transport Networks Management System (TNMS).
- Design and maintained a module for Network Management, which is a component of Transport Networks Management System (TNMS).
- Developed a custom test framework based on prototypes to speedup integration testing more specifically network topology testing.

## Part-time/Freelance

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### Remote, Belgium

BE-MOBILE & WWW.BE-MOBILE.COM

- Design and implemented an ETL system for smart tolling and map matching based in Go, pushing data to multiple sinks (Kafka, Elasticsearch) and multiple data formats (Flatbuffers and JSON).
- Implement an index system to collect user information and support GDPR
- Design and implement a traffic control map system with almost real-time updates using Kafka and Websockets.
- Implementation of a FTP server that bypasses content without store-and-forward.

### Remote, Australia

LIVESENSE & LIVESENSE.COM.AU

- Design and architected a machine to machine cloud platform with capacity for ingesting data from multi network protocols, processing, alarming and data aggregation workflows.
- Modified the web application to support data-push model, improving the user experience visualization as overall site performance.
- Delivered a complete CI/CD pipeline for different development environments reducing development-to-production cycles.
- Design and implement an API gateway to consume data from the IOT platform using KongAPI, Postgres and GraphQL

### Aveiro, Portugal

LOAD-INTERACTIVE & LOAD-INTERACTIVE.COM

- Development of a telemetry system for a well-known beverage company, which interaction involves a control board equipped with GPRS modem containing a TCP/IP stack and TCP/IP server. The development made include a protocol implementation using Javascript on top of NodeJS server, persisting data with Mysql server and Websockets for direct interaction between a web-browser and the board console.
- Development of a GigE Vision compatible photofinish camera with high performance requirements. This system makes use of the standard GigE Vision protocol for interaction with high frame rate cameras and two other proprietary protocols to handle external devices that compose this system. The implementation was done using C++ and C, SQLite for persistence and other Unix tools.

## Extracurricular Activity

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### Linux Group from Universidade de Aveiro

GLUA MEMBER

Aveiro

2002 - 2007

### Coderdojo

MENTOR

Killorglin

2016

## Writing

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### Path Computation Element for MPLS Networks

MASTER THESIS

Aveiro

2006 - 2007