Luís **Carvalho**

SENIOR SOFTWARE ENGINEER · FULL-STACK CLOUD DEVELOPER

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Skills

Programming	Go, Javascript, Python, C, Ruby, Java
DevOps	AWS, Docker, Kubernetes, Terraform, Puppet, Vault, Traefik, NGINX, Concourse
Backend	Express, Ruby on Rails, Play! Framework, Flask
Database	PostgreSQL, MySQL, SQLite, PipelineDB, Neo4j, ElasticSearch, SOLR
Frontend	HTML5, CSS/SASS, AngularJS

Experience

Veniam — *Porto, Portugal*

LEAD SOFTWARE ENGINEER / CLOUD ARCHITECT — *2021 — Present*

As a lead software engineer my role is to drive the technical approaches and solutions related with the cloud software and infrastructure, ensuring proper service quality levels to handle hundreds of thousands of client vehicles. I am also tasked with coaching other cloud team members and ensuring development and security best practices. Finally, I also represent Veniam in customer meetings regarding technical aspects, and define the path for customer integration and new feature development.

- Scale the Veniam cloud to production-level, handling thousands of requests per second.
- Automate testing processes and setup a continuous integration pipelines with Concourse.
- Setup a private key infrastructure to handle mutual TLS certificates for client authentication.
- Monitor component status and performance levels with Prometheus.
- Auto-scale components with custom metrics from Prometheus.
- Setup production-ready logging with Fluentd and ElasticSearch.

SENIOR SYSTEMS ENGINEER / CLOUD SERVICES TEAM LEAD — *2018 — 2021*

As tech lead of the cloud services team I coordinated the development of the new generation of the Veniam cloud. I helped build a scalable and maintainable architecture.

- Built a micro-services architecture for cloud services, with several different APIs that scaled independently.
- Moved from a statically defined infrastructure to an auto-scalable deployment based on Kubernetes.
- Moved NodeJS backend applications to Golang for higher scalability.
- Established processes and best practices to ensure quality; unit and integration tests on backend components, code review for all features.
- Coordinated and managed the daily work of a team of 7 developers, including backend and frontend developers.

SYSTEMS ENGINEER — *Sep. 2016 — 2018*

I started at Veniam working in the mobile WiFi Project. I helped optimize and expand the feature set, working on both the embedded client, as well as the cloud server.

- Developed a location-aware captive portal solution for Veniam's vehicle fleets. It improved on existing captive portal functionalities, adding offline content, analytics, and geo-located, time-based campaign management.
- Developed a configurable questionnaire system that could be embedded in the captive portal, easily reaching all users.
- Deployed on public bus fleets of over 1000 buses over two countries. Used daily by tens of thousands of users.

Fraunhofer AICOS — *Porto, Portugal*

SENIOR SCIENTIST — *Sep. 2010 — Aug. 2016*

I was a researcher in the areas of Autonomic Computing and Ambient Assisted Living, involved in several European, internal and industry projects. I was also the lead developer of internal, company-wide applications for project and resource management.

- Was the leader on a mission-crucial project management web application used internally.
- Developed an internal Android app store backend. A Ruby on Rails application that managed the company portfolio of Android apps.
- Was main developer of a real-time position and status tracking web application. I developed both the backend and frontend.
- Contributed as team leader on an Electronic Health Record system for an industry partner. A Ruby on Rails JSON API with AngularJS frontend.
- Developed a home gateway connecting Bluetooth health sensors to the cloud. I developed sensor drivers, Linux root image, and a TR-069 client.
- Contributed to several QREN and European project proposals.
- Supervised Masters students during their theses.

Birdwing

Backend Web Developer *(part-time)*   *Jun. 2014 — Dec. 2015*

Birwing was dedicated to news crawling and information extraction. My role was to develop the backend APIs, databases and search index, as well as managing the infrastructure.

- Developed a highly scalable data indexer which aggregated SOLR data and Neo4j graph information.
- Designed and implemented the backend APIs to access and manage the indexed data, based on Python Flask.
- Developed the web application, based on Java Play! Framework.
- Created Swagger API documentation and contributed to Swagger FOSS plugins.
- Deployed and maintained the infrastructure based on Amazon EC2 instances.

INESC-TEC

Porto, Portugal

Researcher   *May 2009 — Aug 2010*

I was a Researcher in the areas of user-centric and ad-hoc networks. I also managed the services available to the IAN team.

- Developed an augmented Wi-Fi solution: an auto-configured, multi-hop Wi-Fi network.
- Developed for embedded devices, building on top of OpenWRT.
- Managed the team's infrastructure (Apache, SVN, mailing lists, webconference, remote desktop) and network testbed.

Education

Universidade de Aveiro

Aveiro, Portugal

MAP-Tele Doctoral Program (Curricular Year — 60 ECTS)   *2010 — 2011*

- Grade: 16 out of 20

Faculdade de Engenharia da Universidade do Porto

Porto, Portugal

Integrated Master's in Electrical and Computers Engineering — Major in Telecommunications   *2004 — 2009*

- Final Grade: 16 out of 20

Other Interests

Microelectronics Hobbyist

- Working on home automation projects.
- Created an Atmega-328-based time attendance system, in daily use for over 7 years.

Linux Enthusiast

- Manage/develop my personal home Linux systems: router, access-point, digital photo frame, media center.