

# Ángel Alberto Carretero

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## EXPERIENCE

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- 09/2023–present **Software Engineer – Office of the CTO, CANONICAL (REMOTE)**  
Worked directly with the CTO to kickstart challenging projects used across Canonical. Main achievements:
- Lead developer of [chisel](#), a tool written in Go to create very small and secure container images.
  - Developed a snapshot protocol for [dqlite](#), a distributed SQLite using Raft, all written in C.
  - Supervised and mentored two developers on a daily basis. I led planning, estimating and architecting. I was also in charge of reviewing and approving their work.
  - Worked in a complex dynamic with another manager to deliver a project stagnated for a year, and I managed to deliver 1.0 in a few months.
  - Worked with four different squads in charge of different products to design and implement a rearchitecting of their respective projects into one new common architecture.
- Open source projects I contributed to: [sqlair](#), [dqlite](#), [chisel](#). Example pull requests: [chisel#179](#), [chisel#160](#).
- 09/2022–09/2023 **Software Developer Engineer I – Books Detail Page, AMAZON (MADRID)**  
My teams owned the book detail pages in all surfaces across [www.amazon.com](#), a Tier-1 service that receives thousands of requests per second.
- Developed features using Java and Spring for the backend, JSPs and JS for the frontend.
  - Did complex debugging in many different architectures and surfaces, with dozens of different teams working on the same codebase running hundreds of concurrent experiments.
  - Led a project that required constant communication with the PMs about planning and estimation while coordinating two different teams in different organizations.
  - Actively troubleshooted issues, participated in maintenance and operational excellence including on-call duty for the amazon webpage.
- 09/2021–06/2022 **Collaboration grant – Computer Science department, UAM (MADRID)**  
Design of an esoteric programming language. Creation of an interpreter from scratch in Rust. Includes: library of parser combinators, interpreter, typechecker and more.
- 06/2021–09/2021 **Software Developer Engineer Intern – Music ML, AMAZON (BERLIN)**  
Recommendation systems for Amazon Music, orchestrator written in functional async Java.

## EDUCATION

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- 2017–2022 **BSc in Mathematics, UNIVERSIDAD AUTÓNOMA DE MADRID**  
**BSc in Computer Science, UNIVERSIDAD AUTÓNOMA DE MADRID**
- Average 9.02/10, 14 courses with honors (top 2%). Awarded three times the scholarship for the top 1% of all university students in Madrid.

- Math Bachelor's thesis: *Pseudo-Riemannian Geometry and Schwarzschild space-time*. (9.9/10)
- Computer Science Bachelor's thesis: *Formal design and implementation of a programming language based on facets*. (9.5/10)

## TALKS

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### Git gud: how Git works internally – OPEN SOUTH CODE 2024

Explore how Git stores its state on disk inside the .git subdirectory. For each command, inspect the results live using low-level tools to gain a deeper intuition.

## LANGUAGES

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Spanish	First Language.
English	C1 Level, certified CAMBRIDGE ENGLISH ADVANCED.

## PROJECTS AND MORE

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### Highlights:

- Concurrent HTTP server written in C from scratch.
- Created a small bespoke environment for Linux kernel development in QEMU consisting of Busybox and a custom initramfs to solve the Eudryptula challenge. As part of the challenge solutions, created several kernel modules.
- Security related: HackTheBox (Hacker level), 4th place HackTheBox CTF Quals 2021, 5th place National Cyber League GC 2021.

**Experience in:** Go, Java, Rust, C, Python, GNU/Linux, Binary exploitation, Pentesting.

## CONTACT

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