

# David Baptista

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## EXPERIENCE

### Internship | July 2021 - August 2021

GMV Portugal, Lisbon

- Refactored Angular components which improved the codebase's improve readability
- Designed new components in a web application and implemented both the Angular frontend and ASP.NET backend
- Extended existing functionality in a web application, using the Leaflet JavaScript library, improving end user's experience

### Internship | May 2017 - July 2017, January 2018 - March 2018

VBSS Portugal, Lisbon

- Documented and refactored a ASP.NET Rest API
- Developed a C# WinForms GUI to be used by end users
- Designed and implemented an internal tool in C# to parse XML data, which increased employee productivity
- Improved SQL queries and wrote stored procedures which improved the efficiency of a web application
- Designed and tested a user authentication system

## EDUCATION

**Bachelor of Science in Computer Science and Engineering**, *University of Lisbon - Instituto Superior Técnico* 2018-2021

**Master of Science in Computer Science and Engineering**, *University of Lisbon - Instituto Superior Técnico* 2021-Present

**Exchange Semester**, *University of Amsterdam - Faculty of Science* Spring 2022

## PROJECTS

### Medical Records Management Platform

- Designed and developed a secure full stack medical record management web application using Java, Python and PostgreSQL
- Used XACML based policies for fine-grained, attributed-based access
- Implemented JSON Web Token based authentication
- Implemented a public/private key approach for encryption at rest of sensitive data
- Dockerized application components

### File Server with 2FA

- Designed and developed a file server with a separate authentication system in C, using Unix sockets
- Decided between stream and datagram sockets for each communication channel

### Bicloin - Bicycle Rental App

- Designed and developed a bicycle rental application in Java
- Used gRPC to communicate between servers and an asynchronous data replication approach
- Implemented a quorum consensus approach for fault tolerant, consistent reads
- Used fine-grained read/write locking mechanisms and thread-safe datastructures to protect shared resources

### FaaS Platform

- Designed and developed function-as-a-service cloud platform in C# using gRPC and WinForms
- Developed a Scheduler node which distributed tasks in a balanced manner among Worker nodes
- Implemented a distributed Key-Value storage system supporting reads, writes and conditional writes using a Consistent Hashing approach
- Used a gossip approach for lazy replication among storage nodes
- Implemented a distributed mutual exclusion mechanism to ensure exclusive access during conditional write operations

## TECHNICAL SKILLS

**Programming Languages** C/C++, Python, Java, C#, TypeScript

**Database Technologies** PostgreSQL, MariaDB

**Frameworks** Django, gRPC, JUnit, Angular, Entity

**Other** Git, Docker

## LANGUAGES

**Portuguese** Native

**English** Fluent