



Héctor Álvarez Marcos

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👤 **Github**: <https://github.com/CodificandoAlonso>

Gender: Male **Date of birth**: 17/06/2004 **Place of birth**: Madrid, Spain **Nationality**: Spanish

ABOUT ME

Computer Science(Computer Engineering) student from Universidad Carlos III de Madrid actively looking for job opportunities among the world of low-level computing and Machine Learning. My skillset includes c, python and c++ advanced knowledge, alongside experience in languages like assembly, vhdl, html, css, js or c#.

I also have experience working with different IDE's such as Visual Studio, Visual Studio Code, the JetBrains' IDE's and the intelligent Agents's GAMA platform.

I enjoy working on big challenges and exciting projects and i have the ambition of working among the best in the role.

I am highly motivated to pursue research-oriented advanced training in Computer Science, particularly in Machine Learning, low-level computing, and distributed system architectures fields, as I have already specified before in my preferences.

WORK EXPERIENCE

Grupo de Inteligencia Artificial Aplicada (GIAA) - uc3m <https://giaa.uc3m.es/>

City: Madrid | **Country**: Spain | **Email address**: jesus.garcia@uc3m.es | **Name of unit or department**: giaa | **Business or sector**: Professional, scientific and technical activities

[11/09/2025 – 11/05/2026] **University research support**

- Assisting researcher inside the GIAA-EMT chair
- Currently working on a Multi Agent Bus Simulator designed to evaluate and analyze the scheduled allocation of certain bus lines given a specific Day.

Head Student Representative for the Bachelor's Degree in Computer Engineering in the Colmenarejo's Campus

[01/09/2024 – Current]

- Representing the student body of the Bachelor's Degree in Computer Engineering in meetings with faculty, academic coordinators, and administrative departments.
- Acting as a link between students and the university, communicating concerns, proposals, and feedback regarding academic matters.
- Participating in academic committees, contributing to discussions on course planning and quality assurance processes.
- Coordinating with class representatives to gather input, identify common issues, and ensure consistent communication across the degree program.
- Promoting student engagement by facilitating information flow about academic policies, events, and institutional decisions.
- Supporting conflict resolution by helping address academic or organizational issues raised by students.

[01/06/2023 – 09/09/2025] **Life guard**

Life guards monitor and ensure safety in the aquatic facility by preventing and responding to any emergencies. They identify potential risks, advise individuals on proper behaviour and dangerous zones, conduct life-saving techniques such as first aid and supervise activities of the general public.

[01/09/2022 – 01/01/2023] **Personal Teacher**

Teacher of mathematics and physics secondary high school level

EDUCATION AND TRAINING

[01/09/2022 – Current] **Grade in Computer Engineering**

Universidad Carlos III de Madrid <https://www.uc3m.es/Inicio>

City: Madrid | **Country:** Spain | | **Level in EQF:** EQF level 6

[01/09/2020 – 01/06/2022] **Bachelor**

IES El Espinillo

City: Madrid | **Country:** Spain | | **Level in EQF:** EQF level 4

LANGUAGE SKILLS

Mother tongue(s): Spanish

Other language(s):

English

LISTENING C1 READING C1 WRITING C1

SPOKEN PRODUCTION C1 SPOKEN INTERACTION C1

SKILLS

C | Machine Learning | C++ | Python | Distributed Systems | SQL | Html/CSS | JS | Microsoft Excel | Git | Linux | Docker | C# | JSON | Github | XML | Object-Oriented Programming | cluster computing | ssh | Multi Agent Systems | Intelligent Agents | MongoDB

CREATIVE WORKS

[29/09/2024 – 14/11/2024] **C++ image editor**

Secuential C++ aplication which modifies PPM images in diferent scenarios, some including image resizing, low-frequency colours deletion or format changes

Link: <https://github.com/CodificandoAlonso/ARQUITECTURA>

Criptographic "Wallapop"

Basic criptographic project which tries to replicate some kind of "wallapop" via shell terminal. The criptographic methods implemented include symetric and asymetric encryption, hash handler and schematic certificates chain, alongside the ability to storage via encrypted json the information about users, products and chats in a specific "server"

Distributed System basic project

Implementation of a client/server project written in c which tries to replicate the architecture of a distributed system in which both client and server use a defined "API" which gives functions that interact whith a sort of "database". Both server and client implement their procedures within that header given and the client uses a proxy to communicate with the server and receive the data. In this project I used the library "sqlite3" implemented in c to maintain a scalable system and ease to interact with multiple data.

This project includes 3 versions:

- using POSIX queueing message
- using TCP SOCKETS
- using ONC RPC

Both these versions are completely and concurrent versions of the project

Link: https://github.com/CodificandoAlonso/EJERCICIOS_EVALUABLES_SSDD

Distributed System P2P project

Implementation of a client/server project and P2P project implemented in both c and python which tries to replicate what a structure of a system like "uTorrent" could be. The clients connect to the server and publish the alert that they have a specific content, and here is the deal, as they connect to the server, they start acting like a sort of sequential mini server, which starts listening to requests in a client thread. The user, as I said can publish an alert to save in the server storage that they have a specific content, they dont publish the content itself, and here is the P2P part. The client that wants a specific content has to ask the client which that content belongs to get it.

It also contains a webservice python implementation and RPC server, but the main communication between clients and server is made with TCP SOCKETS

Link: https://github.com/CodificandoAlonso/ENTREGA_FINAL_SSDD

Basic product/consumer project

Project written in c that generates a publisher/consumer implementation using as storage a circle queue. This program is able to generate specific line command requested number of threads which have the ability to interact between them in a concurrent way.

Viper language compiler

Project written in python which, using ply library, implement compiler for a specific and given "VIPER" language, highly typed language. This compiler raises errors both lexic, syntactic and semantic in all the posible scopes

Link: https://github.com/seniorbeto/PPLL_Final

DRIVING LICENCE

Cars:	B	12/05/2025 – 12/05/2035
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SCHOLAR ACHIEVEMENTS

"Mathematics Spring Tournament 2018 Phase 2"

Qualification to the final phase of the mathematics spring tournament 2018 in the level 2(1st and 2nd of ESO)