

Curious and driven by a deep love for learning, I'm passionate about exploring how systems work and constantly seek new challenges to grow as a network and systems engineer. I am currently pursuing a Master's in Network and Information Systems Engineering and a CCNA (Cisco Certified Network Associate).

I'm especially drawn to low-level programming with C and C++, Linux systems, and network technologies like Cisco IOS and routing protocols — I love working close to the metal, building resilient and fast network infrastructures.

## EDUCATION

**FCUP** - Faculty of Sciences, University of Porto

**Expected: June 2026**

***Master in Network and Information Systems Engineering***

- **Relevant Coursework:** Cryptography, Network Administration, Network Security, Systems Administration.

**FEUP** - Faculty of Engineering, University of Porto

***Bachelor in Informatics and Computing Engineering***

- **Relevant Coursework:** Compilers, Computer Networks, Design of Algorithms, Distributed Systems.

## WORK EXPERIENCE

**Schmitt + Sohn Elevadores**

**Feb. 2025. - May 2025**

***Intern***

- Currently developing and implementing clustering, TSP, and simulated annealing algorithms as part of a full-stack application built with Angular, Java Spring Boot, and PostgreSQL.

**BindTuning**

**Aug. 2022.**

***Intern***

- Developed a system that allows potential clients to easily test the company's features through a customized trial website, automatically generated to match their existing business site.

## PROJECTS:

### Nintendo NES emulator

Blogpost: [tiagoaleixo.dev/projects/nas\\_emulator](https://tiagoaleixo.dev/projects/nas_emulator) Repository: [github.com/itsnova204/NES\\_Emulator-LCOM](https://github.com/itsnova204/NES_Emulator-LCOM)

- A software clone of the iconic [first Nintendo console](#) built entirely in C with the ability to support real NES controllers and use its own device drivers to run in [Minix3](#).
- In this project, I was responsible for designing and implementing the complete emulator engine from reading the cartridge to pixels on the screen.
- [Video Demo](#) - [youtu.be/zcQ03VqHwBw](https://youtu.be/zcQ03VqHwBw).

### Real-Time Energy Monitor

Blogpost: [tiagoaleixo.dev/projects/power\\_monitor](https://tiagoaleixo.dev/projects/power_monitor) Repository: [github.com/itsnova204/power\\_monitor](https://github.com/itsnova204/power_monitor)

- An IoT system to monitor real-time energy consumption using an ESP8266 and PZEM-004T sensor. Data is transmitted to a Python Flask backend, stored in PostgreSQL, and visualized with Grafana, all orchestrated with Docker Compose.
- Responsible for the end-to-end design and implementation, from embedded firmware and hardware interfacing to the containerized backend services and data visualization dashboards.
- Key Technologies: C++ (Arduino), Python (Flask), PostgreSQL, Grafana, Docker, Modbus, JSON, IoT.

### **AuctionPeer** - [github.com/itsnova204/auctionpear](https://github.com/itsnova204/auctionpear)

- A fully functional deployment-ready auction website built on top of Laravel and using a PostgreSQL database.
- In this project, I was focused primarily on the design and development of the back end and real-time communications.

### **OwlSort** - [github.com/itsnova204/OwlSort-AI](https://github.com/itsnova204/OwlSort-AI)

- A fun game where you are tasked to sort different colored birds in their branches. With various AI algorithms to help you along the way.
- In this project, I was mainly responsible for creating the algorithm dispatcher using threads and inter-process communication and implementing heuristic search algorithms while also contributing across the entire project.

## **STUDENT GROUPS**

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### **IEEE UPSB - Institute of Electrical and Electronics Engineers - UP Student Branch Mar. 2025 - Ongoing Computer Society - *Member***

- Currently developing a scalable server cluster and secure network infrastructure using Proxmox and Linux routing to host internal services, improving team collaboration and resource efficiency.

### **Nucleus of Computer Graphics and Multimedia**

**Sep. 2023. - Oct. 2024**

#### ***Member***

- Participated in organizing events, workshops, and collaborative projects focused on enhancing students' understanding of visual computing and interactive media.

### **Nucleus of Computer Science**

**Mar. 2021. - Dec. 2022**

#### ***Member***

- Participated in organizing events, workshops, and collaborative projects focused on increasing students' excitement in computer science-related topics.

### **Club of Informatics**

**April. 2016. - May. 2019**

#### ***President***

- Led a high school club focused on bringing students excited about computer science and electronic engineering together to create events and participate in competitions.
- 3rd Place at the national engineering competition Ilídio Pinho Foundation "Ciência na escola" award.

## **VOLUNTEERING**

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### **Code Children**

**Early 2020**

- Taught coding fundamentals to kindergarten students using visual programming tools like ScratchJr.

## **CERTIFICATIONS, SKILLS & INTERESTS**

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- **Certifications:** Currently pursuing **CCNA** (*Cisco Certified Network Associate*)
- **Skills:** Project Planning, Problem Solving, DevOps, C, C++, Java, Javascript, PHP, Haskell, Bash, Python, Git, Linux, Microsoft Azure, CI/CD Pipelines, Cisco IOS, Linux Routing, OSPF, VLAN, Firewalls, Networking, Angular, Java Spring Boot.
- **Interests:** Electronics, Automation, DIY Home Projects, Building Computers, Boxing, Gaming.
- **Languages:** Portuguese - native, English - fluent, German - early learning stages.