

Álan Crístopher e Sousa



Contact

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Languages

Portuguese (native)
English (C1/C2)
German (B2/C1)
French (B2/C1)

Skills

C/C++
Control Theory
Data Analysis
Data Processing
Docker
Embedded Development
GUI Development
GitLab CI/CD
Go
Industrial Automation
Linux/Unix Management
Networked Communication
Problem-solving
Python
Robotics
Rust
SQL
Shell (Bash, Zsh, Fish)
System Analysis
Teamwork
Technical Communication
Troubleshooting
Web (HTML, CSS)
Zig

Interests

Languages
Programming
Technology

Profile

Ph.D. in Industrial Automation and Master's in Electrical Engineering, I have conducted advanced research and worked as a **Mechatronics Engineer** and **Software Developer**, highlighting my abilities to **think critically**, **solve problems**, apply advanced techniques, and **implement solutions**.

Experience

04/2024– **Vitibot**
Development Engineer

France

- DevOps and CI/CD pipeline development for robotics software systems, ensuring robust versioning, testing, and deployment practices.
- Model Predictive Control (MPC) design and implementation for precise trajectory tracking and control in mobile robotic systems
- Comprehensive development of mobile robot functionality using C++ and ROS, including sensor integration, perception, and motion planning
- Real-time system diagnostics to ensure stability, safety, and reliability in autonomous operations
- Hands-on experience with robotic middleware and message-passing systems, enabling efficient and scalable communication across robotic modules

03/2021–09/2024 **Université de Reims Champagne-Ardenne**
Research Associate and Professor Assistant

France

- Communication of results through congress presentation and article publication.
- Test of solution in both simulations and real hardware using the **ROS** in conjunction with other technologies.
- Preparation and ministering of classes on technical subjects, like **Android Development**, **System Analysis and Control**, and ROS.

01/2017–12/2017 **DETEC**
Founder Member

Brazil

- Development of **embedded** software for an ammonia detector.
- Participation in TIM's AWS startup accelerator program.

03/2016–08/2016 **Acal BFi**
Intern

Germany

- Design and production of a platform for measuring power loss within PFC circuit inductors' kernels, including **PCB design** and assembly, software development (embedded and **GUI**), and execution of tests.

Education

03/2021–09/2024 **Ph.D. in Industrial Automation**

Université de Reims Champagne-Ardenne, France

- Title: Enhancing Cyber-Physical System Security: Detection and Mitigation Strategies.

01/2020–12/2020 **Master in Electrical Engineering**

CEFET-MG/UFSJ, Brazil

- Development of a novel switching rule based on **Region of Attraction** to speed up the convergence of **switched systems**.

04/2013–12/2019 **Mechatronics Engineering**

CEFET-MG, Brazil

- Development of a **platform** to help students and researchers **interface** with different hardware using the same **API (Python, HTML, CSS, JavaScript)**.
- Tutoring of three Junior Scientific Initiation groups.
- Student member of the Graduation Council.
- Exchange at Frankfurt University of Applied Sciences (Germany).
- Exchange at Université Joseph Fourier (France).
- **3rd** place in the Latin America **Robotic** Competition.
- **2nd** place in the National Instruments' MyRIO Competition.
- Tutoring of **C/C++** for Mechatronics and IT students.