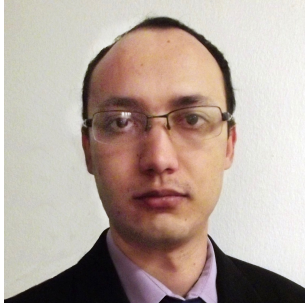


# Álan Crístopher e Sousa



## Personal Data

30 years old, Brazilian

## Contact

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## Languages

Portuguese (native)  
English (C1)  
German (C1)  
French (B1)

## Skills

System Analysis and Control,  
C/C++, Python, Kotlin,  
Assembly, MATLAB, Android  
Development, Frontend,  
Backend, Embedded,  
Automation, Robotics

## Summary

**Master of Science** in Electrical Engineering, in the field of **Control Theory**, and **Mechatronic Engineer** with experience in **system analysis and control** and **programming**. Has worked in two scientific initiations building a platform that interfaces with hardware for system analysis and control objectives and learning Model Predictive Control.

## Experience

- 2016–2016 **Acal BFi** Dietzenbach, Hessen, Germany  
*Intern*  
During this internship, I developed a platform to measure the power loss inside the kernel of the inductor used in a PFC circuit.
- 2010–2014 **Corpo de Bombeiros Militar de Minas Gerais** Divinópolis, Minas Gerais, Brazil  
*Soldier*  
As a firefighter I was entitled to work as a first-aider and diver, being the first response in all sorts of accidents, from fire in the wilds to car accidents and industrial and natural disasters.

## Education

- 2020–2020 **Master in Electrical Engineering** CEFET-MG/UFSJ  
I developed a switching-rule for constrained switched systems based on Region of Attraction under the supervision of Prof. Dr. Valter Leite and co-supervision of Prof. Dr. Walter Lucia.
- 2013–2019 **Mechatronic Engineering** Centro Federal de Educação Tecnológica de Minas Gerais  
Since my first semester, I helped other students from graduation, master and PhD. with their projects, especially with programming. In my last year, I became the student representative in the Graduation Council
- 2015–2016 **Student Exchange** Frankfurt University of Applied Sciences, Germany  
I studied as an exchange student through the Brazilian government's program Ciências Sem Fronteiras (Science Without Borders).
- 2015–2015 **Student Exchange** Université Grenoble Alpes, France  
I studied as an exchange student through the partnership between UGA and CEFET-MG. There I worked in the robotics laboratory helping the team which won the second place in the National Instruments MyRIO Paris competition.

## Extracurricular

- 2017 & 2018 **Python mini-course** Ministered  
I ministered a Python mini-course at my university. The textbook (in Portuguese) is freely available at <https://acristoffers.me/assets/Python3.pdf>
- 2017 **Semana C&T - Week of Science and Technology** 1st Place  
My project got the first place in the 13rd workshop at my university.
- 2015 **National Instruments MyRIO Competition, Paris** 2nd Place  
I helped the team that got the second place in the competition. I was responsible for the code interfacing with the camera and recognizing colors.
- 2014 **Latin American Robotics Competition** 3rd Place  
I was part of the team that got the third place in the competition. I was responsible for the circuitry and programming of one of the robots.

## Publications

- 2020 E SOUSA, ÁLAN C.; SILVA, LUÍS F. P.; LUCIA, WALTER; LEITE, VALTER J. DE S. (2020). XXIII Congresso Brasileiro de Automática: Command Governor strategy based on region of attraction control switching.
- 2020 FILHO, MARCIO R. O.; E SOUSA, ÁLAN C.; LEITE, VALTER J. DE S.; COSTA, EMERSON S. (2020). XLI CILAMCE: Control Of An Oven With Space-Distributed Sensors.
- 2019 FILHO, MARCIO R. O.; E SOUSA, ÁLAN C.; COSTA, EMERSON S.; LEITE, VALTER J. DE S. (2019). XL IBERO-LATIN AMERICAN CONGRESS ON COMPUTATIONAL METHODS IN ENGINEERING: Prototype Modelling for Real Systems.
- 2018 E SOUSA, ÁLAN C.; LEITE, VALTER J. S.; RUBIO SCOLA, IGNACIO. Affordable Control Platform with MPC Application. Studies in Informatics and Control, v. 27, p. 265-274, 2018.
- 2017 LOPES, A. N. D.; LEITE, V. J. S.; SILVA, L. F. P.; e Sousa, Álan. ESTABILIZAÇÃO LOCAL DE SISTEMAS NÃO-LINEARES VIA MODELAGEM FUZZY TAKAGI-SUGENO DISCRETA NO TEMPO. In: Simpósio Brasileiro de Automação Inteligente (SBAI), 2017, Porto Alegre - RS. XIII Simpósio Brasileiro de Automação Inteligente, 2017.

## Interests

**System Analysis and Control Theory** I worked with constrained switched systems and MPC. I studied non-linear and robust control, positive polynomials in control and complex networks.

**Programming** C/C++, Python, Julia, Kotlin, Rust, Ruby, MATLAB...Languages are just tools in the belt. I can program using structured, object oriented and functional paradigms. I always try to use design patterns to make the code more organized and maintainable.