LEONARDO DUARTE VARGAS

Control Engineer

duartevargas.com leonardoes leonardoes22
leonardo.duarte-vargas@centralesupelec.fr

Passionate about innovation and eager to contribute to the development of tomorrow's world, I am fascinated by interacting multi-component systems and the complexity that emerges from them.

EDUCATION

PhD Student
Université Paris-Saclay
11/2024 – Ongoing — Gif-sur-Yvette, France

M2 Control, Signal and Image Processing
Université Paris-Saclay
09/2022 – 11/2023 — Gif-sur-Yvette, France

Double Degree: *Control Engineering*
CentraleSupélec
09/2021 – 11/2023 — Gif-sur-Yvette, France

Control and Automation Engineering
Universidade Federal de Santa Catarina
2018 – 2024 — Florianópolis, Brazil

EXPERIENCE

Robotics Software Engineer Intern
Wandercraft
05/2023 – 11/2023 — Paris, France

- Use of **optimal control** to improve the motion of Wandercraft's personal exoskeleton.
- Development of the control architecture in **C++** with validation in simulation and hardware.

Research Project : cyber-physical systems
CentraleSupélec
09/2021 – 06/2022 — Gif-sur-Yvette, France

- Neural Populations' self-organized criticality studied through control theory.
- Chaos Cryptography from Chua circuits synchronization.

Initiation to Research in Mobile Robotics
Department of Automation and Systems - UFSC
02/2019 – 06/2021 — Florianópolis, Brazil

- **Multi-Robot Construction:** Development of a simulation environment in Unity using C#.
- **Mobile Robotics for Agriculture:** ROS (Robot Operating System), computer vision (OpenCV) and Machine Learning (Python).
- Robotics group inspired by natural systems.

SKILLS

Digital : Python | C++ | Linux | LaTeX | Matlab+Simulink | ROS | Unity | Git

Control : Stability | Controllers | Linear and Non-Linear Systems

Automation : Ladder | PLC | Arduino | Automata | Petri Nets

***Soft Skills* :** Curious | Proactive | Adaptable | Open Minded | Analytical | Optimist

LANGUAGES

French (C2)
English (C2)
Portuguese (Native)

TEACHING EXPERIENCE

Teaching Assistant
CentraleSupélec
2024 – ongoing — Gif-sur-Yvette, France

- Model Representation and Analysis (undergraduate level)
- Dynamical Multi-Agent Systems. Applications to Drone Formation Control (undergraduate level)
- Control Architecture of Complex Systems (master level)

Undergraduate Project Supervisor
CentraleSupélec
2024 – 2025 — Gif-sur-Yvette, France

- Stability and Consensus Control for Drone Formations

Phyisics Teaching Assistant
Colégio Catarinense
08/2018 – 02/2019 — Florianópolis, Brazil