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# Ricardo Cordeiro

## Computer science and engineering

**About me** Robots and AI enthusiast. My Master's project revolves around the "Formalization and Runtime Verification of Invariants for Robotic Systems". During my academic path, I took related subjects when possible. Additionally, I attended some conventions like ROSCon and RoSE. I also like topics like art, sports, and partying, although with humans!

## Education

### 2020 - current, Masters Degree, Computer science and engineering

Main Courses: (Average: 15.4)

- Compilation Techniques: 16
- Artificial Intelligence in Games: 17
- Automatic Learning: 16
- Game Design and Development: 17
- Multi-Agent Systems: 16

### 2016 - 2019, Licentiate Degree, Computer science and engineering

Main Courses: (Average: 14)

- Information Technology in the User's Perspective: 17
- Computer Network: 16
- Introduction to Operational Research: 16
- Introduction to Programming: 18
- First Order Logic: 17
- Introduction to Probabilities and Statistics: 17

## Experience

### Sep 2019 - Jul 2020, Junior Consultant at ROFF

Working at a support service, mainly with SAP Portal/SAP Netweaver as a frontend Java framework and using Oracle SQL Developer as a persistence framework, I often had to access SAP ERP and ABAP code as a backend framework. This means I am somewhat familiar with their Model View Controller architecture. There were also different types of Data Services handled either by SAP BI or directly with Java code. When there wasn't much support service work-related stuff I would help the development team or develop helpful tools myself.

## Other Experiences

### Sports

I practiced federate Basketball since I was 6 up until university, holding at times the title of Captain, I kept playing at university, although at a lower tier.

## Interesting work

### Error Monitor DSL (ros + gazebo)

A domain-specific language to specify properties of robotic systems in ROS. Specifications written by developers in this language can be compiled to a monitor ROS module, that will detect violations of those properties. We have used this language to express the temporal and positional properties of robots, and we have automated the monitoring of some behavioral violations of robots in relation to their state or events during a simulation. I will also be presenting this work at INForum 2022.

### An Experience Report on Challenges in Learning the Robot Operating System

I have helped writing a paper where we describe the challenges and experience of learning ROS from the perspective of novice users. This work was presented by my colleague Paulo Canelas at RoSE 2022.

### Secret Hitler - AI Agents

Agents simulate different players' behavior for the Secret Hitler game. Agents have their own memory and comprehension of what happens in the game and make their decisions based on this perception. (Using JADE - JAVA Agent DEvelopment Framework)

## Tools and Technologies

### Programming Languages

- Java
- Python
- Jinja
- C#
- ABAP
- C

### Databases

- SQL
- OracleSQLDeveloper

### Others

- ROS
- Gazebo
- Docker
- SAP Netweaver
- SAP Portal
- SAP ERP
- SAP BI
- Git
- Unity
- HTML
- Microsoft Office