

LUCAS COELHO FIGUEIREDO

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EDUCATION

University of São Paulo MBA in Project Management	05/2022 - 04/2024 Online
Federal University of Minas Gerais MSc in Electrical Engineering, emphasis in Control and Robotics Thesis: Human-robot swarm interaction on multi-robot coverage control with Virtual Reality	08/2015 - 06/2018 Belo Horizonte, Brazil
Udacity Self-driving car Engineer Nanodegree	01/2019 - 06/2019 Online
Rockstart Accelerator Startup Acceleration Program, intensive course on entrepreneurship	08/2016 - 08/2016 Amsterdam, The Netherlands
Federal University of Minas Gerais Bachelor in Control and Automation Engineering	03/2010 - 07/2015 Belo Horizonte, Brazil
The University of Texas at Austin Exchange Program in Electrical Engineering and Computer Science	08/2013 - 05/2014 Austin, USA
Federal Center of Technological Education High School and Technical Program in Electronics	05/2007 - 12/2009 Belo Horizonte, Brazil

EXPERIENCE

Realtime Robotics Inc. Senior Software Engineer	12/2022 - Today Boston, USA (Remote)
<ul style="list-style-type: none">· C++ engineer on the RapidPlan Create products· Implemented novel motion planning algorithms for robotic arm obstacle avoidance that converge 60% faster and with 20% shorter paths than previous implementations· Scrum Master of the team, responsible for the team's ceremonies and processes	
Hexagon Mining Specialist Software Engineer III - Autonomous Vehicles	11/2017 - 11/2022 Belo Horizonte, Brazil
<ul style="list-style-type: none">· Technical lead on the fleet management system for autonomous vehicles, helping the team designing highly reliable machine-to-machine communication protocols for distributed systems in mining environment using DDS in C++· Responsible for the robotics framework in C++ for Hexagon Mining autonomous solution· Great experience integrating complex products into Hexagon's autonomous solutions, including a high precision GPS-based parking assist, a fleet management system for mining, and a collision-avoidance system· Implemented highly reliable machine-to-machine communication protocols using DDS in C++ (RTI and OpenSplice) and integrated with three different OEMs· Technical mentorship of other seven engineers in the team	
Newatt Energy Systems Co-Founder and CTO	09/2015 - 08/2017 Belo Horizonte, Brazil, and Amsterdam, The Netherlands
<ul style="list-style-type: none">· Designed embedded hardware and firmware for STM32 microcontrollers in a wireless energy sensor, using C++ and Python· Responsible for the technical decisions and relationship with partners and investors· Managed the team for the implementation of the cloud architecture for energy data processing in Node.js and Python on AWS. Implemented data collection using MQTT	
DTI Sistemas Software Development Intern	08/2014 - 08/2015 Belo Horizonte, Brazil
<ul style="list-style-type: none">· Worked on innovation team with company's founders, developing indoor location system using Bluetooth Low Energy (BLE) beacons and Android· Maintenance and development for applications in Java and C# in various industries such as car rental, dam management and healthcare	

Multi-robot Systems Laboratory - Boston University

Summer Research Intern: 400 hours

05/2014 - 08/2014

Boston, USA

- Created algorithms for multi-robot systems applied in area coverage and autonomous exploration
- Developed embedded software for *m3pi* robots in C++
- Published academic results at ICRA 2015 and IJRR 2017

Computation and Robotics Lab - UFMG

Undergraduate Research Assistant: 2880 hours

10/2010 - 08/2013

Belo Horizonte, Brazil

- Developed algorithms for multi-robot coverage and UAV trajectory tracking using C++, ROS, and MATLAB in a Linux environment
- Large experience in ROS, working on it since Diamondback version (2011) and becoming a reference on ROS for labmates and professors

AWARDS

Hexagon Mining Hackathon

2022

Winner

Belo Horizonte, Brazil

- Integrated 3 different Hexagon Mining products into a simulator with virtual reality. Got a Xbox Series X as a prize.

Sabiá Laranjeira Award

2017

Winner

São Paulo, Brazil

- Awarded by "Plataforma Liderança com Valores" institute for the work on Newatt Energy Systems.

Rockstart Smart Energy Program

2016

Finalist

Amsterdam, The Netherlands

- Awarded with a 6-month acceleration program in Amsterdam and EUR 75k in investment.

Brazil Scientific Mobility Program

08/2013 - 08/2014

Awardee

Austin, USA

- Selected for a grant that covered a year of studies at The University of Texas at Austin, including tuitions, housing, meals and travel expenses.

PUBLICATIONS

Brazilian Automatics Congress

08/2018

- L. C. Figueiredo, I. L. Carvalho, L. C. A. Pimenta. "Voronoi Multi-Robot Coverage Control in Non-Convex Environments with Human Interaction in Virtual Reality"
- Experimental results at <https://www.youtube.com/watch?v=cpniwb6UrF8>

International Journal of Robotics Research (IJRR)

02/2017

- A. Pierson, L. C. Figueiredo, L. C. A. Pimenta, and M. Schwager. "Adapting to Sensing and Actuation Variations in Multi-Robot Coverage"

IEEE International Conference on Robotics and Automation (ICRA)

05/2015

- A. Pierson, L. C. Figueiredo, L. C. A. Pimenta, and M. Schwager. "Adapting to Performance Variations in Multi-Robot Coverage"
- Experimental results at <https://www.youtube.com/watch?v=qyYt3frZ7aw>

SKILLS

Programming

Proficient: C++, GTest, Python, ROS, RTI DDS, Git, Ubuntu
Average: Android, Java, OpenSplice DDS, C#, CMake, Docker, OpenCV
Beginner: Node.js, MATLAB, SQL, PCL, Keras

Office

Word, PowerPoint, Excel

Managerial

Scrum, Agile, Lean Startup

Other

LaTeX, UML

English

Fluent

Portuguese

Native

Hobbies

Photography, scuba diving, cooking, mountain biking, electronics projects