LUCAS COELHO FIGUEIREDO

28 years old ◇ lucascoelhof@gmail.com ◇ https://github.com/lucascoelhof ◇ http://lucascoelho.net

EDUCATION

Federal University of Minas Gerais 08/2015 - 06/2018
Masters in Electrical Engineering, emphasis in Control and Robotics Belo Horizonte, Brazil
Thesis: Human-robot swarm interaction on multi-robot coverage control with Virtual Reality

Rockstart Accelerator 08/2016 - 08/2016
Startup Acceleration Program *Rockstart Smart Energy* Amsterdam, The Netherlands

Federal University of Minas Gerais 03/2010 - 07/2015
Bachelor in Control and Automation Engineering Belo Horizonte, Brazil

The University of Texas at Austin 08/2013 - 05/2014
Exchange Program in Electrical Engineering and Computer Science Austin, USA

Federal Center of Technological Education 05/2007 - 12/2009
High School and Technical Program in Electronics Belo Horizonte, Brazil

EXPERIENCE

Hexagon Mining 11/2017 - Today
Software Specialist in Autonomous Vehicles & Scrum Master Belo Horizonte, Brazil

- Responsible for the ROS framework and architecture on the embedded platform
- Designed and participated in the development of solutions for autonomous trucks for the mining industry, including a high precision GPS-based parking assist and a mission manager for autonomous trucks
- Implemented highly reliable peer-to-peer communication using DDS (RTI and OpenSplice)
- Managed an integration with a Collision Avoidance System to improve the interaction of autonomous vehicles with manned vehicles and pedestrians
- Improved previous path planner for parking assist with an RRT* inspired algorithm
- Main Python developer of the team

Newatt Energy Systems 09/2015 - 08/2017
Co-Founder and CTO Belo Horizonte, Brazil and Amsterdam, The Netherlands

- Responsible for the technical decisions and relationship with partners and investors
- Managed the team for the implementation of the cloud structure in Node.js and Python
- Implementation of embedded software in C++ for low power microcontrollers

Multi-robot Systems Laboratory - Boston University 05/2014 - 08/2014
Summer Research Intern 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 10/2010 - 08/2013
Undergraduate Research Assistant and Electronics Technician Intern Belo Horizonte, Brazil

- Large experience in ROS, working on it since Diamondback version (2011) and becoming reference on ROS for labmates and professors
- Designed, assembled and customized five Turtlebots for indoor experiments
- Software development in Linux environment using C++ and MATLAB

AWARDS, GRANTS & EVENTS

ROSCon 10/31/2019 - 01/11/2019
Participant Macau

· Participated on the largest ROS community event, gaining insight of the market, best practices and developed networking

Rockstart Smart Energy Program 02/2016 - 08/2016
Participant Amsterdam, The Netherlands

· Selected as the top 10 among more than 500 participating startups.
· Received investment from a Dutch accelerator (Rockstart)
· Participated in pitching competitions and investor meetings

Brazilian Science Mobility Program 08/2013 - 08/2014
Awardee Austin, USA

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

PUBLICATIONS

Automatics Brazilian 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

PROJECTS

Hexagon Reverse Assist 11/2017 - 03/2019

· Driver assistant system to help haul truck operators to park the vehicle safely. I worked implementing ROS nodes in Python, maintaining C++ code and implementing DDS topics using OpenSplice
· More information: https://blog.hexagonmining.com/reverse-guidance-key-step-to-autonomous-haulage

Smartem Portable Calibrator 11/2016 - 01/2019

· A portable calibration lab for energy meters. Contributed to the hardware specification and the Android application
· More information here: http://minipaelectric.com.br/produto/m100

SKILLS

Programming	Proficient: C++, Python, ROS, RTI DDS Average: Android, OpenSplice DDS, C# Rusty: Node.js, MATLAB
Electronics	Arduino, Eagle
Office	Word, PowerPoint, Excel, Visio
Managerial	Scrum, Agile, Lean Startup
Other	AutoCAD, 3ds Max, Ubuntu, LaTeX, UML
English	Fluent
Portuguese	Native