

Nicolás Marticorena

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Electrical Engineer Universidad de Chile, where I did my thesis in Mobile manipulation using Deep reinforcement learning, currently in the final year of my PhD at QUT Centre for Robotics, working on the topics of visual understanding and mobile manipulation, Under the supervision of Prof Niko Suenderhauf and Dr Tobias Fischer. I am mainly interested in artificial intelligence (AI) and robotics. I am a highly motivated researcher and developer with experience in multiple projects on technology, robotics and AI

Experience

- **MindLabs, Santiago, Chile**
Development Engineer February 2021 - February 2022
Development engineer in charge of the development of a robotics solution for battery replacement for Drones in agricultural applications, my duties consists in Electronic design and embedded systems development of the robotics system.
- **ZIPPEDI, Santiago, Chile**
Robotics Intern January 2020 - February 2020
Implemented a Visual odometry solution for the Zippedi Robot in a supermarket environment.
- **WOODTECH MS, Santiago, Chile**
Intern Product and development January 2019 - February 2019
Developed a volume estimation system based on a surface reconstruction approach. The project was implemented on PCL and presented at the SSAFR2019 symposium.

Academic experience

- **EGB339 Introduction to Robotics**
Practical tutor Fall 2023, 2024
Practical tutor of the introductory course to robotics topics: Robot kinematics, Motion planning and computer vision.
- **Robotics Team UChile Homebreakers and UChile Peppers**
Team Member 2016 - 2020
Yearly participation at the international competition Robocup@home, in the Open League(OPL) and Social Standard Platform League (SSPL). Obtained second place with the team UChile Peppers at Robocup 2019 and third place at Robocup 2018. Mainly working in High-Level Behaviours, implementing interfaces of computer vision algorithms with ROS, robotics simulation using Gazebo and software maintenance.
- **Universidad de Chile Electrical Engineer Robotics Laboratory**
Robotics Lab administrator Fall 2020
Responsible for logistics and outreach. Coordinator of team development and student supervision (around 10 students). Other activities consider the project of PUDU, a telepresence robot for COVID-19 patients.
- **EL4106 Computational Intelligence**
Teaching assistant Fall 2020
This course is focused on pattern recognition, data analysis and optimization.
- **EL4004 Principles of System Control Class**
Teaching assistant Fall 2019, Fall 2020
Introductory class to control systems and state-space models
- **EL5004 Design Workshop - Beauchef Projecta**
Teaching assistant Spring 2019
Project-oriented multidisciplinary class for electrical and mechanical engineering studens.
- **EI2001 Project workshop - Robotics and Mechatronics**
Teaching assistant Fall 2017, 2018, 2019
Supervisor of projects linked to robotics and mechatronics.

- **EI2001 Project workshop - Duckietown**
Teaching assistant Fall 2018
 This class is based on the Duckietown project (www.duckietown.org). Assisted a student project to integrate a tinyLIDAR sensor on a Duckiebot.

Journals

- **Mental and Emotional Health Care for COVID-19 Patients: Employing Pudu, a Telepresence Robot**
RAM 2021 January 2021
 Javier Ruiz-del-Solar, Mauricio Salazar, Veronica Vargas-Araya, Ulises Campodonico, **Nicolas Marticorena**, Giovanni Pais, Rodrigo Salas, Rodrigo Pablo Alfessi, Victor Contreras Rojas and Javier Urrutia

Conferences

- **New Approach for Automatic Bundle Volume Estimation on Wood Truckloads**
 N. Marticorena Vidal, J. Mardones Rojas, R. Palma Amestoy and R. Lastra Ossandón March 2019
 Work presented by R.Palma Amestoy at the international 18th Symposium on Systems Analysis in Forest Resources (SSAFR 2019) held in Puerto Varas, Chile

Technical reports

- **UChile Peppers 2019 Team Description Paper**
Technical Report Universidad de Chile. 2019
 Cristopher Gómez, José Astorga, **Nicolás Marticorena**, Lukas Pavez, Rodrigo Salas, and Javier Ruiz-del-Solar.
- **UChile Peppers 2018 Team Description Paper**
Technical Report Universidad de Chile. 2018
 Javier Ruiz-del-Solar, Cristopher Gómez, Enmanuel Almonte, José Astorga, Lukas Pavez, **Nicolás Marticorena**, Rodrigo Salas.

Volunteering

- **Chair 2020, Vice-Chair 2019 & Co-Founder IEEE RAS Student Branch Chapter**
Fall 2019 - Current
 Founder and current Chair of the IEEE RAS Student Branch Chapter, Organized the Beauchef Robotics Challenge (BRC) 2018 and 2019, a local robotics competition and festival. Supported the 2019 IEEE RAS International Summer School on Deep Learning for Robot Vision.
- **Volunteer IROS 2018**
 Volunteer at the international conference IROS 2018 held in Madrid, Spain. October 2018

Education

- **PhD Robotics - Queensland University of Technology** Brisbane, Australia
QUT Centre for robotics. 2022-Ongoing
- **Electrical Engineer - Universidad de Chile** Santiago, Chile
Faculty of Physical and Mathematical Sciences. 2015-2021
- **Intensive English Course** Bournemouth, England
Kaplan International English. 2018

Awards and Achievements

- **QUT Postgraduate Research Award**
Queensland University of Technology May 2022
 Scholarship granted to pursue my PhD studies at QUT.

- **Winner Facebook Chile Hackathon 2019**
Facebook March 2019
Winner at the Facebook Chile Hackathon 2019 with the integration of ROS and a Facebook messenger bot.
- **Diversity Scholarship**
Open Robotics September 2018
Scholarship to assist to the RosCon-2018 Conference in Madrid, Spain, the days 29-30 of September 2018.

Additional experience

- **FRC Robotics Team 2576 Chilean Heart**
Member 2011-2012 , Captain 2013 2011 - 2013
Regional participation at FRC competition at Los Angeles, California, USA, in the events Rebound Rumble 2012 and Ultimate Ascent 2013.

Skills

- Code Development: Python, Git, Conda, Pixi
- Frameworks: ROS, PCL, OpenCV, Pytorch, Gazebo, GYM and Open3D
- OS: Linux, Windows
- Languages: Spanish (native), English (Advanced, English certification Advanced C1 CEFR)

Interests and Extra-Curricular activities

- **Squash Player.** Between 2010 and 2012, I was part of the National Junior Team, representing Chile at two South American tournaments.
- **Amateur photographer.** I spend my free time making pictures using digital and analog cameras. I also collect and repair vintage cameras.

References

- **Niko Suenderhauf**, Professor Queensland University of Technology, Brisbane Australia.
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- **Javier Ruiz-del-Solar**, Professor Universidad de Chile, Santiago Chile.
Undergrad Supervisor
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