Matías Mattamala
Updated: February 2022

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Education

Oxford Robotics Institute, University of Oxford

DPhil in Engineering Science (Supervisor: Assoc. Prof. Maurice Fallon) — Oct 2019 - Present

Universidad de Chile

M.Sc in Electrical Engineering (Supervisor: Prof. Javier Ruiz-del-Solar) — Aug 2018
Ingeniería Civil Eléctrica — Aug 2018
B.Sc in Electrical Engineering — Mar 2014

Selected Publications (full list)

- Ramezani, M., **Mattamala, M.**, Fallon, M., AEROS: *Adaptive RObust least-Squares for Graph-Based SLAM*, Frontiers in Robotics and AI, 2022.
- **Mattamala, M.**, Chebrolu, N., Fallon, M., *An Efficient Locally Reactive Controller for Safe Navigation in Visual Teach and Repeat Missions*, IEEE Robotics and Automation Letters (RA-L), 2022.
- Wang, Y., Ramezani, M., **Mattamala, M.**, Fallon, M., *Scalable and Elastic LiDAR Reconstruction in Complex Environments Through Spatial Analysis*, European Conference on Mobile Robots (ECMR), Bonn, Germany, 2021.
- **Mattamala, M.**, Ramezani, Camurri, M., Fallon, M., *Learning Camera Performance Models for Active Multi-Camera Visual Teach and Repeat*, IEEE International Conference on Robotics and Automation (ICRA), Xi'an, China, 2020.
- Ramezani, M., Wang, Y., Camurri, M., Wisth, D., **Mattamala, M.**, Fallon, M., *The Newer College Dataset: Handheld LiDAR, Inertial and Vision with Ground Truth*. IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), Las Vegas, USA, 2020.
- **Mattamala, M.**, Villegas, C., Yáñez, J.M, Cano, P., Ruiz-Del-Solar, J., *A Dynamic and Efficient Active Vision System for Humanoid Soccer Robots*, RoboCup Symposium 2015, China, 2015.

Experience

Robotic Systems Lab - ETH Zürich, Zürich, Switzerland — Apr 2022 - Sep 2022
Incoming Visiting Researcher
- Long-term visual navigation for legged robots. Supervisor: Assoc. Prof. Marco Hutter.

Beauchef Proyecta - Universidad de Chile, Santiago, Chile — Jun 2018 - Aug 2019
Coordinator
- Coordination and teaching of multidisciplinary courses between engineering, design, and humanities.

Universidad de Chile, Santiago, Chile — Mar 2012 - Sep 2019
Instructor and Teaching Assistant
- Instructor on mobile robotics based on Duckietown, tech project development, battlebots and data science for astronomy (2017-2020).
- Teaching assistant in mobile robotics, image processing, programming, and electromagnetism (2012-2018).
- Mentor: Courses on robotics for school students co-organized by the Mustakis Foundation (2014-2018).

Knight Robotics, Santiago, Chile — Jan 2015 - Mar 2018
Part time developer
- Assembly of educational robot kits based on Arduino, graphic design tasks, and workshops for school teachers.

ALMA Observatory, San Pedro de Atacama, Chile — Jan 2013 - Mar 2013
Engineering Intern
- Front-End team, implemented a Python-based graphical user interface for the radiotelescope's antennas.

Awards and Grants

Swiss National Science Foundation (SNSF) - NCCR Robotics - PhD Exchange Fellowship — 2021
Government of Chile - Conicyt - Becas Chile Scholarship for doctorate studies — 2019-2023
Department of Graduate Studies, Universidad de Chile - Student Grant to implement Duckietown-based course — 2016

Other activities and skills

- **Languages:** Spanish (Native), English (Advanced).
- **Software programming:** C/C++, Python, Arduino, ROS, MATLAB, Adobe Illustrator, Adobe Premiere, Inkscape, GIMP, Fusion 360.
- **Science communication:** Blog posts for `gtsam.org` explaining the math of factor graph-based estimation (2021). Talk on robot soccer (National Congress of Chile, 2016).
- **Supervision:** Supervisor and examiner of 3 engineering bachelor thesis (Universidad de Chile).
- **Volunteering:** ICCV 2015, ISRR 2017 and IROS 2018, Teens Lab (Stefania Druga, Hackidemia) in the Singularity Summit Chile 2016. Technical assistance to Dr. Kohei Ogawa with the Geminoid HI-4 at the *V Congress of the Future*, National Congress of Chile (2016).
- **Leadership:** President for Electrical Engineering Students Union (2012), founder of robotics and ML communities (Universidad de Chile).
- **Design:** Graphic design of posters and logos at the Universidad de Chile, Dynamic Robot Systems group, and other organizations.