




INGRID NAVARRO-ANAYA

in [linkedin.com/in/ingridnavarroan](https://www.linkedin.com/in/ingridnavarroan) github.com/navarrrs navars.xyz

Incoming PhD Student (Fall 2022) at The Robotics Institute, Carnegie Mellon University





EDUCATION

- 🎓 M.S. in Robotics — *Carnegie Mellon University*  Aug 2020 – Aug 2022
Relevant coursework: Machine Learning, Statistical Techniques for Robotics, Simultaneous Localization and Mapping (SLAM), Learning-based Image Synthesis, Computer Vision
- 🎓 B.S. in Computer Engineering — *Tecnológico de Monterrey (ITESM)*  Aug 2014 – May 2019
- 🎓 Computer Engineering Exchange Student — *École Polytechnique de Montréal*  Aug 2017 – Dec 2017



RESEARCH INTERESTS

- Fields: Robotics Machine Learning Computer Vision Natural Language Processing
- Topics: Intent Prediction Social Navigation Multi-modal Learning and Navigation Reinforcement Learning Imitation Learning

RESEARCH EXPERIENCE

- 💡 Graduate Researcher — *Bot Intelligence Group (BIG) at Carnegie Mellon University*  Aug 2020 – Present
Advised by: Jean Oh
Topics:
 - Trajectory forecasting and navigation in multi-agent environments
 - Multi-modal Embodied Navigation
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- 💡 Undergraduate Researcher — *Intelligent Systems Lab at Tecnológico de Monterrey*  Jan 2018 – May 2019
Advised by: Leonardo Garrido-Luna
Topic: Obstacle detection and navigation on aquatic surfaces.
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- 💡 Robotics Institute Summer Scholar (RISS) — *Navlab at Carnegie Mellon University*  Jun 2018 – Aug 2018
Advised by: Luis Ernesto Navarro-Serment
Topic: Semantic segmentation of 3D point clouds from low-end LiDAR sensors.
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- 💡 Robotics Institute Summer Scholar (RISS) — *Navlab at Carnegie Mellon University*  June 2017 – August 2017
Advised by: Luis Ernesto Navarro-Serment
Topic: Wheelchair detection in cluttered environments

WORK EXPERIENCE

- >_ Robotics Software Engineer — *Medical Robotics Startup in Stealth Mode*  Jan 2020 – Aug 2020
Advised by: Kamran Shamaei and Alfonso Paltán
Project: Design of a self-collision and environment collision detection system for a robot manipulator used for surgical implants.
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- >_ Computer Vision Engineer — *X-LAB Protexa R&D*  Nov 2019 – Jul 2020
Projects:
 - Design of a prototype visual inspection system for detecting paint defects on vehicles.
 - Design of a prototype visual navigation stack for an autonomous mobile robot.

>_ Computer Vision Intern — [Carbon Robotics](#)

📅 Jul 2019 – Sep 2019

Advised by: Kamran Shamaei and Alfonso Paltán

Project: Design of a camera calibration evaluation scheme using a motion capture system and plane fitting methods.

SERVICE

🔑 Committee member for the [Learn-to-Race](#) workshop at IJCAI 2022 — [Carnegie Mellon University](#) 📅 present

🔑 Robotics Institute Summer Scholars ([RISS](#)) program mentor — [Carnegie Mellon University](#) 📅 May 2021 – present

🔑 Admissions committee member for the RISS program — [Carnegie Mellon University](#) 📅 January 2021 and 2022

PAST STUDENTS

🎓 [Shaunak Halbe](#) — [RISS Scholar, CS Student at College of Engineering Pune](#) 📅 Summer 2021

Topic: Vision-and-Language Navigation

PUBLICATIONS

👤 Journal Articles

- Francis, Jonathan, Nariaki Kitamura, Felix Labelle, Xiaopeng Lu, [Ingrid Navarro](#), and Jean Oh (2022). “[Core Challenges in Embodied Vision-Language Planning](#)”. In: *Journal of Artificial Intelligence Research* 74, pp. 459–515. DOI: [10.1613/jair.1.13646](https://doi.org/10.1613/jair.1.13646). URL: <https://jair.org/index.php/jair/article/view/13646>.

👤 Papers

- [Ingrid Navarro](#), Alberto Herrera, Itzel Hernandez, and Leonardo Garrido (2018). “[Data Augmentation in Deep Learning-based Obstacle Detection for Autonomous Navigation on Aquatic Surfaces](#)”. In: *Advances in Computational Intelligence. 17th Mexican International Conference on Artificial Intelligence, MICAI 2018, Guadalajara, Mexico, Proceedings, Part II*. vol. 11289. Springer International Publishing, pp. 342–353.

👤 RISS Publications

- Halbe, Shaunak, [Ingrid Navarro](#), and Jean Oh (2021). [Reason Act: A Modular Approach to Explanation-Driven Agents for Vision-and-Language Navigation](#). *RISS Working Papers Journal*. Vol. 9, pp. 105–111.
- [Ingrid Navarro](#) and Luis Ernesto Navarro-Serment (2018). [Real-Time Semantic Segmentation System of Sparse LiDAR Point Clouds using Lightweight CNNs and Recurrent CRF](#). *RISS Working Papers Journal*. Vol. 6, pp. 105–111.
- [Ingrid Navarro](#) and Luis E. Navarro-Serment (2017). [A Faster RCNN-Based Wheelchair Recognition System](#). *RISS Working Papers Journal*. Vol. 5, pp. 125–132.

HONORS / AWARDS

🏆 Top student of the Department of Engineering — [Tecnológico de Monterrey](#) 📅 Apr 2018

🏆 RoboCup Platform Soccer League Competition, 1st place. — [Mexican Robotics Tournament](#) 📅 May 2018

🏆 Emerging Leaders in the Americas Program (ELAP) Scholarship Recipient — [Government of Canada](#) 📅 Aug 2017

🏆 Scholarship recipient — [Santander - Tecnológico de Monterrey](#) 📅 May 2017

🏆 Hackathon MTY, Junior Category, 1st Place — [Major League Hacking](#) 📅 Mar 2016

SKILLS AND FRAMEWORKS

Python

C/C++

Pytorch

AI Habitat

ROS

OpenCV

VTK

Protobuf

OpenRAVE

Git

Bitbucket

Jira

Ubuntu

LANGUAGES

Spanish

French

English