# Daniel Florea


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## Professional Experience

**since 07/2024** — Robotics Engineer, Oddness Technologies
Full-stack development of industrial robotic solutions for local and international clients. Experience spans the entire pipeline: CAD and PCB design, firmware development, ROS integration, navigation, perception, and planning for various embodiments. Led projects including IKEA Sweden's autonomous warehouse-scanning robot.

**since 03/2024** — Associate Professor, Pontificia Universidad Católica de Chile
Lecturer for IRB1010 (Introduction to Robotic Systems) and IRB2001 (Fundamentals of Robotic Systems).

**since 07/2023** — ML Researcher, National Center for Artificial Intelligence (CENIA)
Research under Prof. Álvaro Soto on integrating NLP with robotics applications. Focused on aligning vision-language models with human intention for embodied AI and robotic reinforcement learning.

**01/2024 – 03/2024** — Research Intern, Texas A&M University
Conducted research in Dr. Swaroop's autonomous vehicle laboratory. Focused on perception and planning algorithms with real-world testing. Team achieved 1st place in the national SAE autonomous vehicle competition.

**2019 – 2023** — Research & Academic Work, Pontificia Universidad Católica de Chile

- Research Assistant at HAIVis Lab (Prof. Denis Parra): worked on medical image analysis, pathology prediction, and diagnostic explainability.
- Cognitive Robotics Team member for Robot-X Maritime Challenge 2022: developed simulation environment and perception pipeline for autonomous catamaran.
- Teaching Assistant for 20+ courses across Robotics, Deep Learning, Machine Learning and Computer Vision.
- Course Coordinator for Artificial Intelligence (2023-2024): planned course structure, materials, assignments, and managed teaching assistant teams (Syllabus).

## Publications

**Preprint (ICRA 2026)** — **Geometric View Synthesis Improves Robotic Manipulation Generalization**
Author. Training-time data augmentation to enhance manipulation robustness under novel camera angles.

**CVPR 2025** — **Data Distributional Properties as Inductive Bias for Systematic Generalization**
Co-author. Demonstrated how training data diversity, burstiness, and latent interventions improve multimodal model generalization by up to 89%.

## Education

**2023 – 2025** — MScEng in Computer Science, Pontificia Universidad Católica de Chile
Advisors: A. Soto & R. Toro · GPA: 4.0
Thesis: *Less Data, More Views: Geometric View Synthesis Improves Robotic Manipulation Generalization*

**2019 – 2023** — BSc in Robotics Engineering (Maximum Distinction)
Pontificia Universidad Católica de Chile · Ranking: Top 1%

**2022 – 2023** — Academic Exchange, Delft University of Technology (TU Delft)
Planning & Decision Making, Machine Perception, Robot Software Practicals, HRI

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| Technical Skills | Python, C++, ROS, PyTorch, Isaac Lab, Gazebo, Autodesk Fusion, Xilinx Vivado |
| Languages | Spanish (Native), English (C1), French (B2), Romanian (Native), Dutch (Basic) |