



Daniel Felipe Ordoñez Apraez

M.Sc. Artificial Intelligence - B.Sc. Mechatronics Engineering

Contact

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Profile

I am a Colombian engineer with a strong passion for Computer Science and Robotics. I am especially attracted to legged locomotion, dexterous manipulation, optimal control, unsupervised and reinforcement learning, and most fields where ML is being used to advance robotics. Born in: 1995

LANGUAGES

| | |
|---------|-------------------|
| Spanish | Mother Tongue |
| English | C1 (TOEFL) |
| German | Intermediate - B2 |

PROGRAMMING

ADVANCED

Python C++ Matlab Java
Javascript LaTeX R

INTERMEDIATE

Octave VHDL

SOFTWARE & OSS

ADVANCED

ROS Git Tensorflow Torch
Linux OMPL Gazebo PCL

INTERMEDIATE

KiCAD Theano Pinocchio
Drake Bullet Crocoddyl

References

Dr. Francesc Moreno-Noguer
BARCELONA TECH
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fmoreno@iri.upc.edu

Dr. Mario Martin
BARCELONA TECH
Tel: (+34) 93 413 7883
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Dr. Carl-Helmut Coulon
INVITE GMBH
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EDUCATION

2019–2021

Barcelona
Spain 📍

Universitat Politècnica de Catalunya – Barcelona Tech

M.Sc. IN ARTIFICIAL INTELLIGENCE

Thesis: Learning to run naturally: guiding policies with the Spring-Loaded Inverted Pendulum

2013–2018

Bogotá
Colombia 📍

Universidad Nacional de Colombia

B.Sc. IN MECHATRONICS ENGINEERING

Thesis: Chemical Powder Handling Automation, approach case study for highly flexible automation.

Exchange semester: Informatics faculty of the **Technique University of Munich**

EXPERIENCE

2021–Present

2019–2020
Barcelona
Spain 📍

Institut de Robòtica i Informàtica Industrial (IRI-CSIC)

ASSISTANT RESEARCHER

STUDENT RESEARCHER

Research Projects: Interactive Perception-Action-Learning for Modelling Objects (IPALM) - Learning natural-looking legged locomotion with Reinforcement Learning techniques and template dynamical models

2018–2019

2017–2018
Cologne
Germany 📍

INVITE GmbH research center (TU Dortmund & Bayer Technology Services)

JUNIOR RESEARCHER ASSISTANT

ROBOTICS INTERN

Research project: Manipulation of plastic bags (deformable materials) using a two-arm robot and 3D vision guidance. The system used multi-viewpoint stereographic cameras to detect the 3D structure of the material, infer robot-grasping points and to plan and execute robot manipulations to reach the target material topology. (Promotional Video)

EP-Patent: *Autonomous Drum and Inliner Handling* - Expected resolution 2022

2016–2017

Bogotá
Colombia 📍

Busescool

SOFTWARE DEVELOPER

Developed front and back-end of administrative tools that allowed the control and monitoring of Busescool's realtime database and services

Mar–Dec 2016

Bogotá
Colombia 📍

Universidad Nacional de Colombia

TUTOR

Courses tutored: - Data structures and algorithms - Numerical methods - Control theory - Object-oriented programming - Basic programming

ACADEMIC PROJECTS

- **Implementation of DeepMind's Multi-Agent Reinforcement Learning model of common-pool resource appropriation**
- **Measuring Parkinson's disease progression**
- **Developed approach for The Semantic Evaluation (SemEval) challenge 2012**
- **Protein evolution/structure prediction** Design of custom permutation invariant CNN layers targeted at processing protein's Multiple Sequence Alignments
- **Transition INVITE's robotics research platform to ROS.**
- **Mechanic, electronic and control design of a Serial Elastic Actuator prototype**
- **Mechanic, electronic and control design of a Micromouse**
- **Mechanic and control design of a two-DoF RP robot**
- **Control design of a 1-DoF air propelled system** experimenting with different robust control techniques (H_∞ , Slide Mode Control and Adaptive control)

AWARDS

- 2019** Among best national scores on the Colombian Saber-Pro state exam, which evaluates all students near graduation of a higher education's degree
- 2019** Selected to the Colombian COLFUTURO's recruitment of talent program and awarded scholarship/loan for higher education
- 2015** University tuition exception