



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 Robotics and Computer Science. My research interests are machine learning and optimal control specially applied to legged locomotion, dexterous manipulation, reinforcement learning, and most applications aimed to close the performance gap between animals and robotics systems.
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 Crocodyl

References

Dr. Francesc Moreno-Noguer
BARCELONA TECH
Tel: (+34) 34 934010775
fmoreno@iri.upc.edu

Dr. Mario Martin
BARCELONA TECH
Tel: (+34) 93 413 7883
mmartin@cs.upc.edu

Dr. Carl-Helmut Coulon
INVITE GMBH
Tel: (+49) 214 312 03125
carl-helmut.coulon@bayer.com

EDUCATION

2019–2021
Barcelona
Spain

Universitat Politècnica de Catalunya – Barçlona Tech

M.Sc. IN ARTIFICIAL INTELLIGENCE

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

2013–2018
Bogota
Colombia

Universidad Nacional de Colombia

B.Sc. IN MECHATRONICS ENGINEERING

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: Learning realistic legged locomotion with Reinforcement Learning techniques and template dynamical models - Interactive Perception-Action-Learning for Modelling Objects (IPALM) - Human hand motion forecasting and pose discretization

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 using a two-arm robot with 3D vision and force feedback.

- Project Presentation Video

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

- Final work certificate

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

PUBLICATIONS - PATENTS

- Ordoñez Apraez, D. F - Agudo, Antonio - Moreno, Francesc - Martin, Mario (2022). An Adaptable Approach to Learn Realistic Legged Locomotion without Examples. Submitted to ICRA 2022 (pending review)
- Ordoñez Apraez, D. F., INVITE GmbH., Bayer A.G. (2022). Autonomous Drum and Inliner Handling. Pending European Patent.

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 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