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
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 – Barclona 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