Daniel Felipe **Ordoñez Apraez**

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

Contact

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github.com/Danfoa

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 robotic 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 · Crocoddyl

References

Dr. Francesc Moreno-Noguer
Barcelona Tech
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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 Research 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
Engineering Faculty 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