



Juan Sebastian Dueñas

Date of birth: 10 Sep 1998

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CONTACT

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ABOUT ME

Mechatronics Engineer Student interested in robotics, UAV, programming, control theory and simulation, driven by a deep interest for learning and motivated to search innovative solutions through the lense of Engineering and Optimization. Passionate about making robotics more accesible to everyone.

WORK EXPERIENCE

17 JUL 2023 – 20 DEC 2023 Colombia

Jr Maintenance Engineer kiwibot

During this role I assumed responsibility for overseeing the smooth operation of a fleet of 15 delivery robots, executing the thorough inspection, diagnostics, troubleshooting and performing the necessary repairs. I successfully maintained the robots in optimal working condition, applying my skills in electronic diagram analysis and proficiently troubleshooting and repairing electronic boards within the mechatronic system.

16 AUG 2022 – 16 DEC 2022 Kingston, Canada

Visiting undergraduate researcher Queens University

Participate in a research project on the development of haptic actuator device driven by a stepper motor. Adapting the stepper motor's behavior by control techniques in order to comply with the movement requirements in haptic applications to be used as an interface with virtual environments or teleoperated robots.

10 APR 2022 – 10 AUG 2022 Madrid, Colombia

Engineering intern Colombian Airforce

Student internship focused on the development and research in the design and construction of remotely piloted aircraft. Development of a drone's obstacle avoidance system were commands were controlled by a microcontroller and decision taken based on signal feed from single beam lidar sensors.

30 SEP 2021 – 9 APR 2022 Bogotá DC, Colombia

Tutor Universidad Nacional de Colombia

Under the tutoring program at my University I participate as a programming tutor responsible of helping students solve their question by providing an envirmet of knowledge construction via discussions, theoretical explanation and pratical examples of code related to the classes basic programming, object orientated programing, data structures and numerical methods

29 FEB 2020 – 30 JUN 2020 Bogotá DC, Colombia

Junior Teacher Assistants Numerical Methods Universidad Nacional de Colombia

As Junior Teacher Assistants of the class Numerical Methods, I helped the professor with the development, implementation and presentation of representative examples of equation solvers, using mathematical software tools such as MATLAB.

EDUCATION AND TRAINING

29 JUN 2016 – CURRENT Bogotá DC, Colombia

Mechatronic Engineer Universidad Nacional de Colombia

AUG 2022

Collaborative Robot Safety: Design & Deployment University at Buffalo & Coursera

Website <https://www.coursera.org/account/accomplishments/verify/WCS4ZHKXK2EV>

DIGITAL SKILLS

Good familiarity with MATLAB, Simulink | Modelling, Simulation and Signal Processing Software: SIMULINK, LabVIEW | Basics knowledge of working in AutoCAD | Document management | ROS | Python | Linux

LANGUAGE SKILLS

MOTHER TONGUE(S): Spanish

Other language(s):

English

Listening C2

Reading C2

Writing B2

Spoken production B2

Spoken interaction B2

German

Listening A1

Reading A1

Writing A1

Spoken production A1

Spoken interaction A1

Levels: A1 and A2: Basic user; B1 and B2: Independent user; C1 and C2: Proficient user

ADDITIONAL INFORMATION

Honours and awards

1 MAR 2020 Mathworks

Winner of Mathworks minidrone competition I lead the winning team at MathWorks' parrot minidrone competition Colombia 2020. The work consisted on developing a flight algorithms so the drone could follow a pathway identified via cameras, as part of my contributions I worked on developing the control policy needed for the robot to follow a path-track based on the camera and ultrasound sensors.

Link <https://www.mathworks.com/academia/student-competitions/minidrones/minidrone-masters.html>

DEC 2021 Colombian National University RAS chapter

Outstanding volunteer at Ceimtun-RAS Was awarded by Ceimtun-RAS during the year 2021 for his outstanding participation while helping out with the development of challenges for UNrobot competition.

Projects

SEP 2021 – APR 2022

Stewart Gough platform restoration Work on the restoration and put back in service of the Stewart Gough platform located at the mechatronics lab.

Link https://github.com/jsduenass/Stewart_Gough_platform_UNAL/tree/upkeep

MAY 2022 – JUN 2022

robocup arm challenge competition participate in the RoboCup Autonomous Robot Manipulation (ARM) Challenge, which consist in the implementation of perception and control algorithms in MATLAB and Simulink to grasp and manipulate bottles and cans within a table to classify them into two bins

Link https://github.com/cychitivav/robocup_arm_challenge

14 SEP 2021 – 14 NOV 2021

UNrobot competition simulation challenges As part of the UNrobot competition, a robotics competition organised by the IEEE's RAS chapter, I help develop and organize and set up the environment for the simulation competitions. This competition consisted on controlling a differential robot reaching some target points and while avoiding obstacles. The competition was developed in a virtual environment based on matlab and robotics playground.

Link <https://www.youtube.com/watch?v=syOV7jXzFqI>

Volunteering

DEC 2022 – CURRENT

Open source contributor Participate in the ROS2 documentation translation into spanish initiative. And bring down the language barrier that might from getting interested in robotics.

Link https://github.com/ROS-Spanish-Users-Group/ros2_documentation

2021 – CURRENT Bogotá

CEIMTUN-RAS group member As part of the student group CEIMTUN-RAS I helped out in it's mission of encouraging and promoting robotics, automation and their research. Help out in the organization "UN robot 14" robotics competition and help setup the simulation challenges.

Upper-Year Peer Mentor Be part of the university program Upper-Year Peer Mentor and offer guidance and support to students in the first-year physics course specifically in the subject of fundamentals of mechanics.