JOHNATHAN GABRIEL CASELLES NUÑEZ

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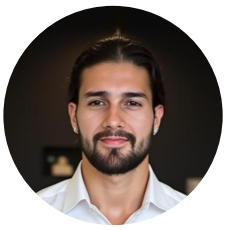

Skills

Programming languages: C/C++, Python, Arduino, Assembly (ASM), Gcode, PLC Ladder.

Robotic Systems: FANUC, Universal Robots, Stäubli, Epson.

Technologies & Tools: SolidWorks, Visual Studio, VS Code, Matlab, Simulink, Proteus, EasyEDA, MPlab, FluidSim, FTview, Studio5000, OpenCV, google Colab, Cura Ultimaker.

Personal & soft skills: Teamwork, Spatial Intelligence, Project management, Creativity, Problem-solving, Decision-making, Adaptability.

Work Experience

Mechatronic Engineer Intern [12/2022 - 03/2023]
Relianz Mining Solutions (Barranquilla, Colombia)

- Programmed FANUC industrial robots to customize/improve metallization tasks, reducing processing times and optimizing performance by up to 35% while maintaining strict compliance with quality specifications.
- Designed and developed mounting devices and cavity protection parts which simplified metallization processes, reducing preparation time by up to 43%, and preventing metal coating contamination in non-targeted areas.
- Reduced rework of new and non-frequent components from 60% to 5% by standardizing processes while developing and updating technical documentation ensuring accuracy and consistency in metallization procedures.

Education

M.Sc. EU4M in Mechatronic Engineering - Erasmus Mundus scholarship holder [09/2023 - 07/2025]
1st. year at Universidad de Oviedo (Gijón, Spain)
2nd. year at Supmicrotech ENSMM (Besançon, France)
Relevant Coursework: Microcontrollers, Prototyping and manufacturing, ROS2, Computer aided design, Mechatronic systems modeling, 2D image processing, Industrial robotics, Micro-robotics.

B.Sc. in Mechatronic Engineering [01/2019 - 07/2023]
Universidad Autónoma del Caribe (Barranquilla, Colombia)
Relevant Coursework: Mechatronic design, Machine design, Robotics, Industrial automation, Embedded systems, Flexible manufacturing systems, Wireless communications, Software modeling, Artificial vision, Image processing.

Projects

- **Motion capture and gesture recognition of a pen for high-precision manipulation and Real-time control of a 6DOF industrial robot (Stylet3D)** *Supmicrotech ENSMM [10/2024 - 01/2025]*
  Software leader, in charge of gesture recognition and motion capture of a tracking pen, using the Intel RealSense camera. Supporting scaled movements that allow high-precision manipulation tasks in micro and normal scales.
- **Final degree project - Indoor and outdoor air quality measurement device for the detection and monitoring of air pollutants with hazardous health effects (Q-Air*)** *Universidad Autónoma del caribe [11/2022 - 06/2023]*
  Designed, assembled, and programmed a portable 6x6x8cm IoT device for monitoring of 6 types of air pollutants, atmospheric variables such as temperature and humidity, with cloud storage and visualization through blynk.
- **Set of tele-manipulated 6DOF robotic arms for handling biological agents in pharmaceutical and scientific applications (ROCCO*)** *Universidad Autónoma del caribe [08/2022 - 11/2022]*
  Project leader, in charge of designing and programming a set of human-scale robotic arms able to replicate user's movements by means of gyroscopes and accelerometers located in their arms.
- **Flexible manufacturing system for bottle filling (FILLBO*)** *Universidad Autónoma del caribe [03/2022 - 06/2022]*
  Project leader, designed and programmed a fully automated FMS for filling plastic bottles, consisting of 6 stations across 5 phases (detection, filling, sealing, verification, and classification), capable of filling 2 bottles per minute.

This project is registered at the Research and Transfer Department (DIT) of the Universidad Autónoma del Caribe and its intellectual properties are endorsed by the Colombian Ministry of the Interior, protected by copyright, and recognized by the Colombian Ministry of Science, Technology, and Innovation (Minciencias).

Language Skills

Spanish: Mother tongue
French: B2
English: C1
Portuguese: A2

Courses and Certificates

- **SOLIDWORKS CAD Design Associate** - Dassault Systèmes [2024]
- **Machine Learning** - Udemy [2023]
- **Android App Development** - Universidad Nacional Autónoma de Mexico/Coursera [2020]