JOHNATHAN GABRIEL CASELLES NUÑEZ

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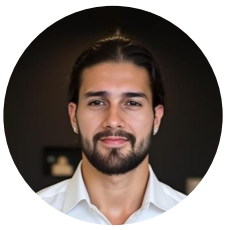

Skills

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

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

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

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

Work Experience

Master thesis [02/2025 - 08/2025]
at Wandercraft (Paris, France)

- Developed an automated, modular test bench to independently validate embedded software behavior on medical exoskeleton components against physical feedback, featuring instant pass/fail reporting and driving a 4× reduction in validation time.
- Automated 90% of the end-to-end test workflow using a modular EtherCAT-integrated framework and custom-built web dashboard, enabling real-time result monitoring, dynamic test scenario generation, and seamless scaling across components.

Mechatronic Engineer Intern [12/2022 - 03/2023]
at 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.

Latest 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]*
- **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]*
  see published paper at: https://doi.org/10.3390/engproc2025083013
- **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]*
- **Six-Station flexible manufacturing system for bottle filling (FILLBO*)** *Universidad Autónoma del caribe [03/2022 - 06/2022]*

Full details and insights about these projects can be found at jotace17.github.io/Portfolio/

Education

M.Sc. EU4M in Mechatronic Engineering - Erasmus Mundus scholarship holder [09/2023 - 08/2025]
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.

Language Skills

Spanish: Native **English:** C1 **French:** B2 **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]