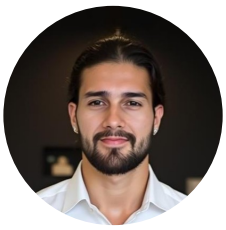
JOHNATHAN GABRIEL CASELLES NUÑEZ

Paris, France | linkedin.com/in/jcaselles | jotace17.github.io/Portfolio/
Johnathan.caselles@eu4m.eu | +33 7 51 34 43 38



Skills

Industrial robots: FANUC, Universal Robots, Stäubli, Epson.
Programming languages: C++, Python, Arduino, Assembly (ASM), Gcode, PLC Ladder.
Soft skills: Teamwork, Spatial Intelligence, Project management, Creativity, Problem-solving, Decision-making, Adaptability.
Technologies: Git, linux, SolidWorks, Cura Ultimaker, Matlab, TensorFlow, Proteus, EasyEDA, EtherCAT, CANopen, LiDAR, OpenCV.
Development: Rapid prototyping, microcontrollers, data adquisition, sensor/actuator integration, computer vision, 3D printing.

Work Experience

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

- Developed an automated, modular test bench for in-house validation of embedded software behavior on medical exoskeleton components against physical feedback, enabling sub-5-minute validation cycles with instant pass/fail reporting.
- Implemented ~4,000 automated checks across four core test scenarios to evaluate embedded system performance, supported by a custom web dashboard for real-time monitoring, dynamic scenario generation, and scalable deployment across components.

Mechatronic Engineer Junior [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)** *At Supmicrotech ENSMM*
  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.
- **Autonomous anthropomorphic Robot capable of playing TicTacToe (Robo3T)** *At Universidad de Oviedo*
  Software and mechanical design leader of a 3DOF anthropomorphic robot with built-in artificial vision and 3 difficulty levels capable of physically and autonomously play tic-tac-toe against a user.
- **Final degree project - Indoor and outdoor air quality measurement device for the detection and monitoring of air pollutants with hazardous health effects (Q-Air*)** *At Universidad Autónoma del caribe (click here to see published paper)*
  Designed, assembled, and programmed a portable 6x6x8cm cloud-based IoT device for monitoring of 6 types of air pollutants (CO, CO_2, NO_2, O_3, $PM_{2.5}$, PM_{10}), atmospheric variables such as temperature and humidity and live location.
- **Set of tele-manipulated 6DOF robotic arms for handling biological agents in pharmaceutical and scientific applications (ROCCO*)** *At Universidad Autónoma del caribe*
  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.

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, Biomechanics, 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