JOEL GARCIA MARTIN

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EDUCATION

Universitat Politècnica de Catalunya (UPC) | Terrassa, Spain *Bachelor's degree in Aerospace Vehicle Engineering* | *Sept 2022 – Present (Expected June 2026)*

- **Cumulative GPA:** 6.98/10 (Spanish Grading Scale)
- **Relevant Coursework:** Space Systems Engineering, Control Theory, Orbital Mechanics, Software Engineering, Aerodynamics, Physics, UAVs, Fluid Mechanics, Theory of Structures.

RESEARCH & PROFESSIONAL EXPERIENCE

SEAT S.A. (Volkswagen Group) | Martorell, Spain *R&D Intern, Production Development & Digital Solutions* | *Oct 2025 – Present*

- **Implementing** digital transformation initiatives within the factory, utilizing AI and low-code architectures to optimize production in the factory.
- **Prototyping** hardware/software solutions for industrial environments using a "fail-fast" agile methodology to validate new technologies.
- Conducting and applying research on state-of-the-art industrial digitization to improve component tracking and system efficiency.

UPC Space Program: GRASS Rover Team | Terrassa, Spain *Team Captain* | *Oct 2025 – Present*

- **Leading** a team of **30+ engineers** and scientists competing in the European Rover Challenge (ERC).
- Overseeing full systems integration, project timeline management, and the production of technical and scientific reporting.

Software Lead & Developer | *Sept 2022 – Oct 2025*

- **Architected** the rover's autonomous navigation stack using **ROS** (Robot Operating System) and Python. Developed a custom Telemetry & Diagnostic System and a Flask-based Graphical User Interface (GUI) for remote mission control and Implemented firmware for actuators and sensors for the rover to be used in Mars-analog environments.

MIT Edgerton Center | Barcelona, Spain & Boston, MA (Hybrid) *International Senior Engineering Mentor* | *2022 – Present*

- **Mentoring** international engineering design workshops in Spain, Italy, Mexico, and the US, by guiding high school students through the full product lifecycle from ideation to functional prototyping.
- Teaching hands-on skills in electronics (Arduino), coding, and fabrication, embodying the MIT "Mens et Manus" philosophy.
- Mentored student teams to build prototypes, including remote-controlled vehicles and fluid systems, within a 3-day deadline.

CONFERENCE PRESENTATIONS

Presentation on How Students Can Lead Their Own Education | AAPT Summer Meeting 2024 | Link

Poster Presentation: Propelling into our Future | AAPT Summer Meeting 2024 | Link

TECHNICAL SKILLS

- **Programming:** Python, C/C++, SQL, JavaScript, HTML/CSS.
- **Software & Tools:** ROS / ROS 2, Docker, Ansible, Git/GitHub, Fusion360 (CAD), LaTeX, Figma, Power BI, Notion.
- **Hardware:** Arduino/Microcontrollers, PCB Design, Soldering, 3D Printing, Rapid Prototyping.
- **Languages:** Spanish (Native), Catalan (Native), English (Fluent, TOEFL Score of 108/120), French (Basic).

PROJECTS

Shaking Hands Overseas | *MIT Engineering Design Workshop 2021*

- Built a 3D-printed biomechanical hand controlled remotely via API.
- Engineered a sensor glove (using Python/Arduino) to capture hand movements and replicate them on the robotic hand across ocean distances in real-time with the collaboration of Lucas VRTech.

Large-Scale Haptic Floor Instrument | *MIT Engineering Design Workshop 2022*

- Designed, prototyped and constructed a walkable musical interface using sensors and microcontrollers, considering the possible wear over time.
- Programmed the backend logic to convert physical steps into audio output for an interactive user experience.

CERTIFICATIONS & AWARDS

- **CS50AI:** Introduction to Artificial Intelligence with Python (Harvard University/edX)
- **CS50:** Introduction to Computer Science (Harvard University/edX)
- **Hackathons:** 7x Participant/Mentor in MIT & UPC Hackathons (2019–2025)