

Javier Marina

Robotics Engineer · Firmware Technical Lead at HP · Medical Robotics Lecturer

Barcelona, Spain

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Summary

Highly motivated Robotics Engineer with a proven track record of leading teams and exceeding customer expectations. As the **Technical Lead** for a 10+ person firmware team, I spearheaded the development of **HP SitePrint**, an autonomous mobile robot for construction layout, achieving unmatched localization accuracy of $\pm 3\text{mm}$ ($\pm 1/8$ of an inch). Developed innovative algorithms for precise orientation (± 0.05 degrees) and localization using Robotic Total Station (RTS) and Inertial Measurement Unit (IMU) technology, enabling the robot to navigate complex construction environments with exceptional precision.

As the **Accuracy Lead** for the SitePrint project, I meticulously defined rigorous metrics and tests to guarantee consistent performance against strict specifications. I have been a key contributor who has actively shaped the technology roadmap, pushing the boundaries of innovation in autonomous construction robotics.

Driven by a passion for lifelong learning and a desire to leverage expertise in a challenging role that furthers advancements in the field of robotics, I also serve as a **Medical Robotics Teacher at La Salle Barcelona**. In this role, I apply my deep technical knowledge to **educate and mentor the next generation of engineers**, translating complex concepts into practical applications and fostering critical thinking in a rapidly evolving field.

Work Experience

HP Inc.

Sant Cugat del Vallès, Barcelona

Firmware Technical Lead · R&D Robotics Firmware Engineer

November 2021 - now

- Working on the **HP SitePrint** project, a robot for autonomous and accurate layout on construction sites. Developed with ROS and HP's printing expertise.
- As the Technical Lead for the Firmware team, I participate in the definition of the technology roadmap, collaboratively define software architectures and oversee the development process on a daily basis.
- Consistent delivery of results and improvements, required by the fast pace at which the SitePrint business is scaling. Contributions on the technical side (accurate positioning) and geographical expansion, including a 2 month stay in the United States.
- There, I served as an R&D engineer to support reseller on-boarding, while also being both Customer Assurance and Sales representative for the US market while the team was being consolidated.
- Strong proficiency in Python, C++ and ROS.

La Salle Campus Barcelona

Barcelona

University Lecturer · Medical Robotics

February 2025 - now

- Deliver lectures and practical sessions on advanced medical robotics concepts to university students, covering topics such as robot kinematics, control systems, and surgical applications.
- Design and implement hands-on laboratory exercises using **Universal Robots** platforms, enabling students to gain practical experience in robot programming and manipulation.

Education

Jaume I University

Castellon, Spain

Master's Degree in Intelligent Systems

September 2020 - July 2021

- Final thesis: *Egocentric Head and Eye Gesture Recognition for Human-Robot Interaction Using Eyewear Cameras*. Score of **10/10**, with distinction. Later **published** in IEEE Robotics and Automation Letters (RA-L).
- Developed a hybrid CNN-LSTM deep neural network using PyTorch, NumPy, and Pandas for gesture recognition.
- Research Stay: Implemented and compared state-of-the-art dense SLAM algorithms (C/C++) for AR applications.
- Main skills covered: artificial intelligence (AI), computer vision, robot intelligence, human-robot interaction (HRI).
- Final grade: **9.59/10**.
- EQF Level 7, 60 ECTS.

University of Malaga

Malaga, Spain

BSc. in Electronics, Robotics and Mechatronics Engineering

September 2016 - July 2020

- Final thesis: *Waveform design for wireless power transmission systems*. Score of **10/10**, with distinction.
- Main skills covered: robot design and programming (both industrial and mobile), computer vision, continuous-time and discrete-time control systems, digital and analog electronic design.
- Final grade: **9.45/10**.
- EQF Level 6, 240 ECTS.

Honors & Awards

May 2023 **Simplify and Solve award**, FY23 Q1-Q2 HP Large Format Heroes Awards
Jan 2023 **You made it happen award**, FY22 Q4 HP Large Format Heroes Awards
Sep 2021 **1st Place**, CEABOT 2021 Computer Vision challenge
Sep 2021 **3rd Place**, CEABOT 2021 Global Qualifying
Jul 2021 **1st Place**, VI MotoStudent International Competition (MS2)

Sant Cugat, Spain
Sant Cugat, Spain
Castellon, Spain
Castellon, Spain
Alcaniz, Spain

Language skills

Spanish First language
English Full professional proficiency

Other skills

Programming	Python, C/C++, MATLAB, Simulink, Java, Android, Kotlin, Unity game engine
Robotics	ROS, Universal Robots, Staubli
Machine learning	PyTorch, scikit-learn, TensorFlow
Other software-related skills	Version control systems (Git), Agile methodologies (Scrum), Linux foundations
Computer vision	OpenCV, CNN for object recognition

Side projects

UMA Racing Team

Chief motor controller designer

Malaga, Spain

February 2019 - September 2020

- Electronic Engineering Lead, focused on the controller design (KiCAD) and programming (C/C++).
- I also oversaw the development of the power inverter, the data acquisition module and the battery.
- The team eventually obtained the Best Electric MS2 award in the 2021 edition.

Nintendo-Switch-Remote-Control

Sole developer

September 2019 - now

- Software that allows remote play for Nintendo Switch. Built from scratch, currently supports sending controller input from one computer to another and playing games remotely.
- Technologies used: Java 11, JavaFx, Kotlin, WebRTC.
- More information at <https://github.com/javamarina/Nintendo-Switch-Remote-Control>.