Hugo Sevilla Martínez

Robotics Engineer (In Training)

Alicante, Spain +34 647 73 12 52
hugosema.19@gmail.com
eugegeuge.com
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Final-year Robotics Engineering student with a solid mathematical foundation and a passion for disruptive technology. I have academic experience in computer vision and systems control. I consider myself entrepreneurial, oriented towards complex problem-solving, and possess a strong capacity for autonomous learning. I am seeking opportunities to apply my knowledge in Python, C++, and Robotics to challenging projects.

Education

University of Alicante **Alicante**
Bachelor's Degree in Robotics Engineering *2022 – Present*

- **Status:** Final year student (Bachelor's Thesis in progress).
- **Focus:** Autonomous systems design, robot kinematics, and artificial perception.

Technical Skills

- **Programming Languages:** Python (Advanced), C/C++ (Intermediate-Advanced), MATLAB, C#.
- **Robotics & Simulation:** ROS/ROS2, Unity 3D, Gazebo, Simulink.
- **Artificial Intelligence:** Computer Vision (OpenCV), Neural Networks, PyTorch/TensorFlow, SVM.
- **Tools & Others:** Git/GitHub, Linux (Ubuntu), LaTeX, Agile Methodologies.

Featured Projects

Academic Project **ROS 2, Nav2, MVSim, Python**
Autonomous Forklift: Warehouse Logistics Automation *2026*

- Designed and implemented a complete autonomous forklift system for warehouse logistics simulation.
- Developed a **Graph-Based Navigation** system using topological maps and BFS for predictable path planning.
- Created a custom **Lift Controller** to simulate realistic pallet manipulation and physics interactions.
- Built a Mission Control GUI to manage navigation goals and loading/unloading tasks.

Academic Project **Unity, ROS, C#, VR**
VR Teleoperation and Planning for Kinova MICO2 Robot *2025*

- Development of an immersive **Virtual Reality** interface for the control and monitoring of a Kinova MICO2 manipulator (6 DoF).
- Implementation of a **trajectory planning** system within the virtual environment, allowing the user to define waypoints intuitively.
- Real-time synchronization between the digital twin and the physical robot for safe movement validation.
- Controller integration via middleware (ROS/Unity Bridge) to ensure kinematic precision.

Academic Project **Python, OpenCV, CNNs/SVM**
MathSolver: Equation Solver with Computer Vision *2024*

- End-to-end development of an application capable of scanning handwritten equations via camera.
- Implementation of **Computer Vision** algorithms for image preprocessing and segmentation.
- Training of hybrid models combining **CNN** and **SVM**; strategic use of SVM to simplify the model and maintain high accuracy given the limited dataset size.
- Integration of a symbolic calculation engine to solve equations in real-time.

Languages

Spanish: Native
English: C1 - Advanced *Full professional proficiency.*
Valencian: C1 - Advanced *Official Certificate.*

Other Competencies & Interests

- **Entrepreneurship:** Strong interest in participating in startups to seek innovative solutions to diverse problems, covering both daily needs and critical challenges.
- **Soft Skills:** Technical team leadership, effective communication, and adaptability.
- **Technology:** 3D Printing, Drones, and Industrial Automation.