

Jorge Ortega Camazón

Boston, MA | ortega.jor@northeastern.edu | (617) 963-4144 | www.linkedin.com/in/jorge-ortega-camazon

EDUCATION:

Northeastern University , Boston, MA	May 2026
<i>Master of Science in Robotics</i> , Concentration: Electrical and Computer Engineering	GPA: 4.0
Relevant Courses: Robotics Sensing and Navigation, Reinforcement Learning, Robot Mechanics and Control	
Universidad de León , León, Spain	
<i>Bachelor of Science in Industrial Electronic and Automation Engineering</i>	
Relevant Courses: Robotic Prototypes, Automatic Control, Power Electronics, Digital Electronics	
*Studied abroad during the academic years 2018-2019 and 2022-2023 in USA and Italy respectively	

TECHNICAL SKILLS:

Software: LTspice, MATLAB, EAGLE, Fusion 360, SolidWorks, AutoCAD, ROS, Gazebo, RViz, MS Office Tools

Hardware: Soldering, PCB design, Arduino, ESP32, Analog circuits, Electronic equipment

Programming Languages: Python, C++, MATLAB

Robotics and Automation: SLAM, LiDAR, IMU, GPS

Languages: Spanish (Native), English (Fluent), Italian (Conversational)

PROJECTS & EXPERIENCE:

Graduate Researcher	May 2025 – Present
Silicon Synapse Lab, Northeastern University	
• Implemented multi-language (Python/C**/MATLAB) workflows using Pinocchio library to import biped robot URDFs, compute inverse/forward dynamics and kinematics, and visualize inertial properties in Drake	

Stable Walking on Biped Robot using RL	Feb – Apr 2025
• Trained a customized biped robot in the MuJoCo Walker2D-v5 environment using a PPO algorithm based on the Stable Baselines3 library, achieving stable and consistent forward locomotion	
• Developed tailored Python code enabling parallel training across 4 environments, integrating TensorBoard for real-time performance tracking and facilitating hyperparameter tuning	
• Modified reward functions, torque limits and agent's geometry to encourage realistic motion dynamics, enabling energy-efficient walking and high-speed running behavior across tests	

Synchronization and Coordination of Mobile Robots	Nov – Dec 2024
• Simulated a multi agent robot system for autonomous exploration within a shared environment based on the open-source <i>TurtleBot 3</i> robot ROS packages	
• Modified autonomous navigation algorithms and configured SLAM launch files for 3 individual robots to enable simultaneous multi-agent exploration in customized Gazebo environment using ROS Noetic	
• Configured Rviz for real-time visualization of each robot's exploration process and dynamically merged maps to generate a complete representation of the environment	

Control System Optimization for a Two-Elevator Building	Nov – Dec 2024
• Developed and simulated an optimized elevator control system in MATLAB to improve time and energy efficiency in a multiple-elevator building	
• Designed and implemented three different elevator controllers for later analysis of system performance	
• Utilized parallel computing techniques to enable real-time multi-elevator operation and dynamic request allocation, obtaining realistic request handling and decision-making	
• Evaluated control system performances by assessing efficiency metrics such as total travel time, floors traversed and workload balance, achieving a 250% improvement in time and optimal workload balance	

Low-Cost, Multifunctional Autonomous Robot	Feb – Jul 2024
• Engineered an autonomous robot for indoor mapping with a focus on cost-efficiency using durable, lightweight materials, optimizing weight distribution for stable operation in diverse environments	
• Integrated an RPLIDAR A1M8 for real-time mapping and a GPS NEO-M8N for localization, enabling precise navigation with ESP32 microcontrollers	
• Developed custom firmware to process and filter data, manage communication between microcontrollers and sensors, and implement motor control and navigation logic.	
• Achieved a functional prototype capable of autonomous navigation and mapping with a cost inferior to \$300, demonstrating a potential affordable alternative to commercial Autonomous Mobile Robots	