



Jesus Enrique Aleman Gallegos

Erasmus Mundus Joint Master (EMJM) graduate in Intelligent Field Robotics Systems (IFRoS). Highly motivated to contribute to a dynamic and fast-paced laboratory environment. Focused on advancing the state-of-the-art in Sensor Fusion and SLAM. Particularly interested in leveraging Deep Learning Techniques to enhance robot adaptability in dynamic and unstructured environments.



enrique.aleman1998@gmail.com



+34692933517



Barcelona, Spain



enriquea52.github.io/Enrique_Aleman.github.io/



linkedin.com/in/jeag1235



github.com/enriquea52

SKILLS

C++

Python

ROS2

CUDA

Linux

Matlab

PyTorch

PCL

OpenCV

Docker

LANGUAGES

Spanish

Native or Bilingual Proficiency

English

Native or Bilingual Proficiency

INTERESTS

Multi-Modal Sensor Fusion

Robot Navigation

Semantic SLAM

EDUCATION

Erasmus Mundus Joint Master Degree In Intelligent Field Robotic Systems (IFRoS)

Universitat de Girona (Spain), Eötvös Loránd University (ELTE) (Hungary)

10/2021 - 09/2023

GPA: 9.41/10

Thesis

- Multi-modal Sensor Fusion for Robot Localization In an Industrial Environment

Bachelor of Engineering in Cybernetics and Electronics

Centro de Enseñanza Técnica y Superior (CETYS) (Mexico)

09/2017 - 06/2021

GPA: 97.92/100

Honours

- Magna Cum Laude Honours.

Bachelor of Arts in Management

City University of Seattle (USA)

01/2018 - 03/2021

GPA: 3.730/4.0

Engineering Certificate

College of The Rockies (Canada)

08/2016 - 08/2017

WORK EXPERIENCE

Robotics Software Engineer Intern

TAVIL

01/2023 - 06/2023

Spain

Achievements/Tasks

- Design drivers to interface communication between a B&R PLC and ROS2 via UDP socket communication.
- Develop an introductory training course on ROS2 for the engineering staff.
- Develop an EKF SLAM based localization system fusing wheel encoders, IMU, ICP odometry and fiducial markers for an autonomous forklift using ROS2.

WORK EXPERIENCE

Computer Vision Developer Intern

Coronis Computing S.L. [↗](#)

06/2022 - 08/2022

Spain

Achievements/Tasks

- ▣ Developed a GUI for configuration and visualization of data coming from a hyperspectral camera of 224 bands using Qt Creator (C++).
- ▣ Developed a GUI for real-time food inspection running a deep learning model on data coming from a hyperspectral camera reaching 500 FPS.
- ▣ Accelerated Image processing algorithms with OpenCV and CUDA (C++).
- ▣ Embedded a PyTorch model into production with the LibTorch FrontEnd for C++ running inference on an NVIDIA GPU.
- ▣ Developed Hyperspectral data processing and visualization tools in Python.

Embedded Software Intern

Bose [↗](#)

10/2020 - 04/2021

Mexico

Achievements/Tasks

- ▣ Firmware testing and development of automation scripting tools for testing automation in Python 3.

Robotics Research Intern

Research and Development Center for Digital Technology (CITEDI) [↗](#)

06/2019 - 11/2019

Mexico

Achievements/Tasks

- ▣ Research Internship, High Performance Intelligent Computing Laboratory at CITEDI-IPN.
- ▣ Implemented a computer Vision Algorithm for a 1:10 scale vehicle to follow a lane with a PID controller.
- ▣ Took a Master Level class in Intelligent Computing (Topics such as Fuzzy logic and Fuzzy control).
- ▣ Participated at "6th State Meeting of young researchers 2019 in Baja California". Winner of the first place of oral presentations.
- ▣ Assistance and presentation of the 2019 course on "Wireless communication technologies for the industry 4.0".
- ▣ Participation in the CINAP research seminary at CETYS with the presentation "Research Experiences at CITEDI-IPN".

SUMMER SCHOOLS

IEEE RAS Summer School on Multi-Robot Systems (08/2022 - 08/2022)

MRS Group at FEE-CTU Prague, [Certificate of Attendance](#)

Robotics and AI Summer School 2022 (07/2022 - 07/2022)

Universidad Politecnica de Catalunya, [Certificate of Attendance](#)

Mechatronics systems engineering and product innovation Summer School
(06/2018 - 07/2018)

RWTH Aachen University, [Certificate of Attendance](#)

PUBLICATIONS

Conference

Autonomous navigation for a holonomic drive robot in an unknown environment using a depth camera (USA) [↗](#)

21 August 2020

Research publication about an implementation using a holonomic robot platform with a depth sensor camera for obstacle avoidance.

PUBLICATIONS

Journal

Lane detection using sliding window method (Mexico)

07 June 2020

Lane detection using the sliding window algorithm, the lanes were identified and a control signal was generated for keeping the robot in track without getting out of the lanes

Conference

Autonomous navigation for a differential drive robot in a partially known environment (USA)

6 September 2019

Research publication on autonomous mobile robot for navigation in a partially known environment. C was used for driving the hardware and Python 2.7 was used for the planning algorithm in the ROS (Robot Operating System) framework running on a raspberry Pi 3B+.

CERTIFICATES

Autonomous Mobile Robots, ETH Zürich-EdX (07/2020 - 08/2020)

▣ [Certificate of Completion](#)

Fundamentals of Reinforcement Learning, University of Alberta-Coursera (05/2020 - 07/2020)

▣ [Certificate of Completion](#)

Robotics Software Engineer Nano Degree, Udacity (06/2020 - 07/2020)

▣ [Certificate of Completion](#)

REFERENCES

Dr. Narcis Palomeras Rovira - Researcher / IFROS Master Coordinator
"University of Girona"

Contact : narcis.palomeras@udg.edu

Dr. Zoltán Istenes - Associate Professor / IFROS Master Coordinator
"Eötvös Loránd University (ELTE)"

Contact : istenes@inf.elte.hu

Dr. Rafael Garcia - Head of the Underwater Vision Lab
"University of Girona / Coronis Computing"

Contact : rafael.garcia@udg.edu