Hortencia Alejandra Ramírez Vázquez

MSc Student in Computer Science
Monterrey, Mexico

✉ ha.ramirezv@outlook.com ⊙ soyhorteconh **in** hortencia-alejandra-ramírez ⦸ soyhorteconh.github.io
+52 5548078019

EDUCATION

Tecnológico de Monterrey
Master of Science, Computer Science
Monterrey, Mexico
Expected graduation: Jun 2026
- Start Date: Aug 2024   GPA: 96/100   Awards: Scietific Program Scholarship
- Thesis topic: Line and Area Defense Based on Set-Invariance using Computer Vision Algorithms for Intruder Detection and Tracking.

Tecnológico de Monterrey
Bachelor of Science, Robotics and Digital Systems (Blockchain credential)
Monterrey, Mexico
Aug 2020 - Jun 2024
- Leaders of Tomorrow Scholarship Award   GPA: 98/100   Awards: Mention of Excellence, Class 2024.
- Relevant courses: Programming of Data Structures and Fundamental Algorithms, Object-Oriented Programming, Integration of Robotics and Intelligent Systems.

EXPERIENCE

John Deere
Embedded Software Intern
Monterrey, Mexico
Feb 2024 - Jun 2024
- Maintenance and support of Vehicle Network System database, working with CAN and J1939 protocols, analyzing, designing, building, testing, and deploying highly integrated complex solutions.

Inria
Research and Development Intern
Nancy, France
Sep 2023 - Dec 2023
- Enhancing robot hand pose using Azure Kinect SDK sensor and visual markers tracking for object manipulation with Tiago for the EUROBIN project at Larsen Team.
- Developed a visual servoing using ROS, AprilTag library, C++, and Docker.
- ⊙ Visual-Servoing-Tiago

Vanttec
Software Developer
Monterrey, Mexico
Aug 2022 - Aug 2023
- Developed a software prototype for object detection in an Unmanned Underwater Vehicle using YOLOv5, ROS and Python. (Awarded in software prototype category at Expo Ingenierías 2022)
- Performed PCB assembly.

PROJECTS

Keyword Extraction from Texts A Comparative of Frequency-Based and Graph-Based Methods   Dec 2024
- Developed a natural language processing algorithm for extracting keywords from texts using classical word frequency extraction and the TopicRank graph-based approach using Python.
- ⊙ Keyword Extraction

Designed of an Autonomous Vehicle   Jun 2023
- Developed an algorithm for a mini autonomous vehicle with a jetson nano, integrating PID controllers for a line follower robot using ROS, RViz and Gazebo.
- Trained an object detection model for traffic lights and signals detection using YOLOv5 and Python.
- ⊙ Autonomous Vehicle

PUBLICATIONS

Trial on 3D Gaussian Splatting for Emulating Real-Life Learning Experiences in Undergraduate Educational Robotics   Sep 2024
- Arturo E. Cerón-López, Jason A. Castaño-López, José G. Buenaventura-Carreón, Oscar Cárdenas-Gómez, Juan C. Hernández-Ríos, José A. León-Navarro, Max Pacheco-Ramírez, **Hortencia A. Ramírez-Vázquez**, Andrea M. Salcedo-Vázquez
- ⦸ ICRA@40

Análisis bioinformático de genes diferencialmente expresados involucrados en el desarrollo de cáncer de colon   Sep 2021
(Bioinformatic analysis of differentially expressed genes in colon cancer)
- Frida Cano F., Gala Flores G., **Hortencia A. Ramírez V.**, Gabriela Cortés O., Harumi C. Manzano Y., Diana P. López E., Leonardo M. Cañete, Aurora A. Pérez.
- ⦸ Revista de la Sociedad Mexicana de Biotecnología y Bioingeniería 2021, p.403, ISSN: 0188-4786.

SKILLS

Programming and Frameworks: C++, Python, PyTorch, SQL, Matlab, ROS/ROS2, Linux, Docker, WSL, GIT, Shell
Simulations: RViz, Gazebo   Computer Vision: OpenCV, YOLOv5
Languages: *English* - **ADVANCED**   *Spanish* - **NATIVE**