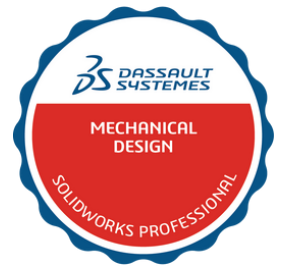# JULIO SEBASTIÁN DE LA TRINIDAD RENDÓN

ENGINEERING SCIENCES PHD STUDENT

CONTACT INFORMATION

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STUDIES

Instituto Tecnológico y de Estudios Superiores de Monterrey

Master in Engineering Sciences
Period 2023-2024

- Thesis: Design and Optimization of a Neuromorphic Controller for Ackermann Vehicles in Mixed Reality Environments
- GPA: 97.30 / 100

Mechatronics Engineering
Period 2018-2022

- "Academic Distinction" scholarship
- Graduated December 2022
  - Honorific Mention Graduate with a GPA of 94.85 out of 100
  - "Premio Ceneval a la Excelencia - EGEL Plus"

PROFESSIONAL EXPERIENCE

High School Professor
August 2023 - December 2023

- "An approach to engineering" for Fifth Semester students at Prepa Tec de Monterrey

Design, Fabrication and Connection of ECU PCBs for AGV Tec proyect
August 2022 - August 2024

- Analysis of requirements and design of PCB boards for multiple ECUs for the AGV Tec proyect at Tecnológico de Monterrey Campus Puebla
- Embedded Systems Programming for control and communication using CAN Bus Networks

Testing, Revision and Update of processes described in technical reports
Summer 2020

- Preparation of developement enironments
- Focus on Linux distributions such as RedHatOS, CentOS and Ubuntu

KEY ABILITIES

- Solidworks Certified
  - Professional in Mechanical Design (C-LMXVT7AGP6)
- Universal Robots A/S
  - Basic, Professional and Application track in e-Series
- Certified IBM Enterprise Design Thinking Practicioner and Team Essentials for AI
- AWS Certified Pro DeepRacer, Regional Top 5
- English (Linguaskill C1 - 180+ Score), German (Basic)
- Build and operate machine learning solutions with Azure Machine Learning Learning Path
- AI Foundation, Project Management Fundamentals and Blockchain Fundamentals via IBM Skillsbuild

CO-CURRICULAR ACTIVITIES

- Part of the Organizing Comitee of ISEM2022 Congress and IDEEA 2022 Forum, "First Robotics Competition" Puebla 2023 and Mechatronics Grand Prix 2024.
- 1st Regional Place and 3rd National Place in the SIEMENS LOGO! Cloud Challenge with connection to AWS.
- National Finalist in "Act In Space Hackathon 2022".
- 1st Place on on "Expoingenierias" 2022 edition.
- Tutor during four tetramesters at Prepanet program (Maths and Physics).
- Finalist for "Electrohack 2024" in Puebla.
- Presentation of papers in ICECC 2024 and ISEM 2024.
- Participation in the AMR research group as team leader with undergraduate students.
- Autumn School "Sistemas Dinámicos, Control y sus Aplicaciones" at CICESE.
- Voluntary Evaluator for the Final Assessment for IMT/BME Graduates

PUBLICATIONS

- "Real-Time Sensory Adaptive Learning for Engineering Students" - ICL Conference 2022.
- "Towards Diffusion Model Based Dataset Augmentation for Negative Obstacle Detection Systems" - ICECC 2024
- "Leveraging PIX2PIX architecture for saliency map generation from teaching slides" - EDULEARN24
- "Bio-inspired explainable neuromorphic controller for path tracking and obstacle evasion using an array of Hindmarsh-Rose neurons" - ISEM2024
- "Fatigue Analysis of Printed Composites of Onyx and Kevlar"
- "Methodology to Size a Battery Pack and Electric Motor with Real Drive-Cyles for Different Vehicles"
- "Multi-objective optimization methodology to select electric motor and battery pack using real drive-cycles"