Jesus Daniel Gonzalez Rocha

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PROFILE

Passionate about software and embedded systems development, with a strong background in C and Python. During my internship at Swarco McCain, I contributed to real-time firmware and SNMP-based tools for traffic control systems. I thrive in collaborative environments and enjoy solving complex problems, especially in the fields of Embedded Systems and Artificial Intelligence. With hands-on experience in developing AI models and algorithms, I aim to contribute to cutting-edge projects that push the boundaries of technology. I am constantly exploring emerging trends to stay at the forefront of innovation and apply my problem-solving skills and coding expertise effectively.

EXPERIENCE

SWARCO MCCAIN | Embedded Systems Intern

Jan 2025 – May 2025 | Tijuana, Mexico

- Supported development and testing of firmware for traffic controller systems using C and embedded Linux.
- Assisted in debugging hardware-software integration issues in real-time environments.
- Contributed to the configuration and automation of embedded software builds and deployment pipelines.
- Collaborated with the engineering team to implement improvements in traffic signal control modules.
- Collaborated on the development of the **NTCIP Test Tool**, an open-source utility for testing traffic controllers via SNMP (v1 and v3).

FACULTY OF DENTISTRY | Assistant Technical Support

Jan 2024 – Jul 2024 | Tijuana, Mexico

- Provided technical support in the Faculty of Dentistry, with a focus on server maintenance and resolving issues with machines.
- Performed routine server maintenance to ensure optimal performance and minimize downtime for faculty operations.
- Diagnosed and resolved technical issues related to specialized dental equipment, ensuring minimal disruption to clinical and academic activities.

PROJECTS

NEURAL NETWORK LIBRARY DEVELOPMENT Team leader| Class Project for Neural Network

Aug 2023 – Dec 2023 | Tijuana, Mexico

- Led the development of a custom **neural network library** neural network library, coordinating a team of developers to build functionalities for deep learning models.
- Implemented core modules for layer definitions, backpropagation, and optimization algorithms, primarily in Python.
- Focused on creating an efficient, modular, and extensible architecture to facilitate various neural network configurations.
- Conducted regular code reviews, mentored team members, and ensured adherence to project timelines.

EDUCATION

UNIVERSIDAD AUTONOMOMA DE BAJA CALIFORNIA

Bachelor of Science in Computer Engineering
Aug 2020 | May 2025

SKILLS

PROGRAMMING

3+ years:
Python • C
1+ years:
Matlab
0+ years:
JavaScript • Java

TECHNOLOGY

Git/Github • Linux
UNIX • Windows • Embedded Systems
Artificial Intelligence • Automation

LANGUAGES

Spanish (Native)
English (C1 – Advanced)

RESEARCH

QUANTUM COMPUTING | Researcher

Jan 2023 – Jul 2023 | Tijuana, Mexico
Conducted research in quantum computing as part of a collaborative team under the supervision of Dr. J. Reyes Juarez Ramirez to develop algorithms focused on quantum computing applications. Focused on applying quantum algorithms to optimize specific computational problems, conducting experiments and analyzing outcomes. Contributed to the development of technical documentation and presented findings in faculty seminars.

LINKS

Github:// **Dan1543**
LinkedIn:// **Jesus Daniel Gonzalez Rocha**