DAVID LÓPEZ

TECHNICAL SUPPORT | MECHATRONICS ENGINEERING | IOT DEVELOPMENT

CONTACT

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PROFILE

I'm always looking for new knowledge and experiences. I have a special interest in technological advances, and where they are leading us. Nowadays I'm looking forward to a career shift towards a Tech-Development or Tech-Support oriented job.

EDUCATION

2020 - UNITEC [SPS, HONDURAS]

Bachelor's Degree in Mechatronics Engineering

TECHNICAL SKILLS

- Bilingual (Spanish/English)
- C++, Python
- HTML, CSS
- Command Line Interface (Windows, Linux)
- Remote Desktop
- Ladder and Block diagram programming for PLC automation
- 3D CAD Design
- Azure IoT Hub
- Nvidia Deepstream

SOFT SKILLS

- Learning and Personal Development
- Analysis and Problem Solving
- Teamwork and Communication

EXPERIENCE

2022 (February-June)

Technical Assistant | Innovate Biz Solutions-Remote

I assisted in the integration and troubleshooting of a chat plugin (WP Guppy), a video chat app (Video SDK), and the android mobile app for DoctorYa's web application(**doctoryaconsulta.com**). I also attended to any of our client's queries on the technical issues/configurations related to the use and operation of the platform.

2021 (August-October)

Industrial Automation Instructor | CIT-Honduras

I taught lessons of industrial automation at the Center of Innovation and Technology, which included the next modules:
Industrial Sensors, Variable Frequency Drives, LOGO PLC, Siemens PLC, and Industrial Networks.

2020 (January-March)

Industrial Maintenance Engineer | Polyshel-Mexico

I contributed to the corrective and preventive maintenance of the mechanical, electrical, infrastructural, and control systems of Polyshel. The main activities included:

- Preventive and corrective maintenance to all the related parts and mechanisms of the PVC extruders.
- Correction and replacement of temperature sensors, contactors, motor protectors, bearings, and pressure valves in bad condition.
- Contributions to the re-boot of an extrusion line in disrepair.
- Contributions to the automation of a manual vinyl cutting machine.

2017–2019

Head of Laboratories | UNITEC-Honduras

I was in charge of the Physics and 3D Printing labs at the Unitec SPS campus. I managed the guidelines for the other instructors on how they had to teach their labs, how to manage the content being taught, their student's grading, and the respective materials and equipment. I also taught in some labs myself.

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COURSES & CERTIFICATES

- Electrical Installations-INFOP
- CISCO CCNA1-Netacad
- Public Speaking and Leadership - CJOL
- PCAP Programming Essentials with Python-Netacad
- Drone Piloting and Construction – IHCIETI
- Getting Started with AI on Jetson Nano
- Building Video AI Applications at the Edge on Jetson Nano

PERSONAL PROYECTS

2022

IoT-based card reader

We developed an IoT-based card reader using the MFRC-522 module with ESP32 and ESP8266, and Azure SDK for C to enable local communication. The project was able to show the capabilities of IoT in creating smart and connected devices, and was also proved functional with other traditional sensors, in both microcontrollers. I'm also working with ESP32-CAM as an RSTP camera to make computer vision applications using a Jetson Nano.

2020

Counting, Monitoring, and Classification of Access using Artificial Vision

Using Python, OpenCV, and the YOLOv3 architecture with pre-trained Darknet weights, we were able to create a prototype application that could detect objects such as vehicles and people in video, classify them, and count if they were entering or leaving a local business. Published and presented at LACCEI 2020 International Multi-Conference of Engineering, Education, and Technology: http://laccei.org/LACCEI2020-VirtualEdition/meta/FP468.html

2019

Automation of a Sugar Cane Juice Extractor

A manual sugar cane juice extractor, existing in the local Honduran market, was taken as a starting point. Various mechanical, electrical, and electronic modifications were carried out to develop its complete automation. The PIC18F45K22 microcontroller was used to carry out the control and reading of a variety of actuators and sensors. Publication made in the RED UNIA Journal of Agro-Industry Sciences: https://doi.org/10.17268/JAIS.2019.006

2019

Design and Manufacturing of Sumo Robots

I designed and assembled two Sumo Robots, one for the Mini Sumo category and another for the Mega Sumo category. Using Solidworks for CAD design of the chassis structure and other mechanical parts, Proteus in PCB design for signal and control boards, Arduino as the main microcontroller, and a variety of 3D printed parts for assembly, they were able to detect opponents and charge against them while remaining within the dojo.