DAVID A. LÓPEZ

MECHATRONICS ENGINEER

CONTACT

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PROFILE

I'm always looking for new knowledge and experiences, to contribute positively to my environment and the ones around me. I have a special interest in technological advances, and where they are leading us. Nowadays I'm looking for a career change towards a software development-oriented job.

EDUCATION

2020

UNITEC [SPS, HONDURAS]

Bachelor Degree in Mechatronics Engineer

TECHNICAL SKILLS

- PLC programming-TIA Portal, LOGOv8
- 3D CAD Design-SolidWorks, Fusion360
- PCB Design-Proteus
- Python, C++
- HTML, CSS
- Bilingual (Spanish/English)

COMPETENCIES

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

EXPERIENCE

2021 (August-Present Day)

Industrial Automation Instructor | CIT - San Pedro Sula

I am in charge of teaching lessons of industrial automation in the Center of Innovation and Technology, which includes the modules of: Industrial Sensors, Variable Frequency Drives, LOGO PLC, Siemens PLC, and Industrial Networks.

2020 (January-March)

Industrial Maintenance Engineer | Polyshel-Mexico

I contributed to the maintenance of the machines used for the fabrication of PVC profiles, by following relevant techniques of corrective and preventive maintenance, which involved action on the mechanical, electrical, control and infrastructure systems of Polyshel's industrial plant, as the following:

- Corrective and preventive maintenance of the barrel and the endless screws, motors and hydraulic pumps of the PVC extruders.
- Correction and exchange of temperature sensors, contactors, motor protectors, bearings and pressure valves in bad condition.
- Contributions to the start-up of an extrusion line in disrepair.
- Contributions for the possible automation of a manual vinyl cutting machine.

2017–2019

Head of Laboratories | UNITEC-Honduras

I was in charge of the Physics and 3D Printing laboratories on the Unitec SPS campus. My job consisted of assembling the necessary materials and equipment respectively for each laboratory, as well as teaching and supervising the correct use of these to the other instructors and students.

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COURSES & CERTIFICATIONS

- Electrical Installations-INFOP(Honduras)
- Public Speaking and Leadership-CJOL(Honduras)
- PCAP Python Programming Essentials-Netacad

CURRENTLY LEARNING

- Javascript
- Django
- Bootstrap
- ML Algorithms
- Haskell

PERSONAL PROYECTS

2020

Access Counting, Monitoring and Classification using Computer Vision

Using Python, OpenCV, and YOLOv3 architecture with Darknet pretrained weights, we were able of **prototyping an application capable of detecting objects like vehicles and people in video, classify them, and count if they were entering or exiting a local commerce.** Published and presented in the LACCEI 2020 International Multi-Conference of Engineering, Education and Technology: http://laccei.org/LACCEI2020-VirtualEdition/meta/FP468.html

2019

Design and Fabrication of Sumo Wrestling Robots

Based on the rules and parameters of the Sumobots competitions, I designed and assembled two Sumo **Robots**, one for the Minisumo category and other for the Mega Sumo category. Using Solidworks for the **CAD Design** on the chassis structure, and other mechanical parts, Proteus on the **design of PCBs** for signal and control boards, **Arduino** as the main microcontroller, and a variety of **3D printed parts** for their assembly, they were able to detect opponents and charge against them, while maintaining themselves within the dojo.

2019

Automation of a Sugar Cane Juice Extractor

A manual sugar cane extractor, existing in the local Honduran market, was taken as a starting point. Various modifications, both **mechanical, electrical and electronic**, were carried out in order to develop its **complete automation**. Using the **PIC18F45K22 microcontroller** for carrying out such automation, which consisted on the control and lecture of a diversity of actuators and sensors.
Published in RED UNIA Journal of Agro-Industry Sciences: https://doi.org/10.17268/JAIS.2019.006