DAVID A. LÓPEZ

MECHATRONICS | AUTOMATION | COMPUTER VISION

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. With a special interest in technological advances, and where they are leading us.

EDUCATION

2020
UNITEC [SPS, HONDURAS]
Bachelor Degree in Mechatronics Engineer

2015
VILLAS DEL CAMPO BILINGUAL SCHOOL [SPS, HONDURAS]
Baccalaureate in Sciences and Humanities

COMPETENCES

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

TECHNICAL SKILLS

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

EXPERIENCE

2020 (JAN-MAR)
Industrial Maintenance Engineer | Polyshel-México
I contributed to the maintenance of the machinery 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.

Projects:

- Contributions on the **automation** of a foil cutting machine by removing all the unnecessary control boards it had, and recommending better ways it could become automated, which included: the use of electro valves, an encoder, a digital counter, relays and buttons.

2018–2019
Chief of 3D Printing Lab | UNITEC-Honduras
I was in charge of the **setting and maintenance of the 3D printers** in UNITEC labs, **contributing to the development of a diversity of projects** that the engineering and architecture students had throughout their career.

2017–2019
Chief and Instructor of Physics Laboratories | UNITEC-Honduras
As a chief and instructor of the Physics Labs, my activities included:

- Assembling the necessary materials and equipment respectively for each laboratory.
- Ensuring the order of the laboratories and the maintenance of its equipment.
- **Helping students** have a better understanding of physical laws and phenomenon by the experiments done on each lab.
- Assuring the proper management of the labs imparted by the instructors.
- **Training and follow up** of each new instructor.
- Revision and improvements of some lab reports which presented errors or misguidance.

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COURSES & CERTIFICATIONS

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

HOBBIES

- 3D Printing
- Drone Piloting
- Music mixing & Dancing
- Reading
- Training, Exercise & Meditation

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.** Currently ACCEPTED for publication and presentation in the LACCEI 2020 International Multi-Conference of Engineering, Education and Technology.

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**