Israel Arroyo

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EDUCATION

Tec de Monterrey   Graduating in June 2023
B.S. in Robotics and Digital Systems Engineering   *GPA 95.84 /100*

EXPERIENCE

Grading Programming Languages   December 2019 – Present
Social Service
- Acquired teaching and analytical skills grading assignments in **Python, CUDA** and **Scheme.**

Robotics Classes   February – May 2021
Social Service
- Prepared and gave introductory online classes for programming and robotics to small groups of children.
- Gave basic Algorithms, Robot simulation, Logic Gates and Python classes.

MAJOR PROJECTS

WAV Player   Mar – Jun 2021
Low-cost microcontroller system for music reproduction
- Designed with displaying song information, pausing, rewinding and skipping features.
- Implemented in **C** for the Atmega2560 chip.

Line Follower ARDrone 2   Nov 2020 – April 2021
Algorithm for Parrot ARDrone 2 to follow a line in simulation and in hardware
- Made use of simulation platform Gazebo and **ROS Melodic** tools.
- Implementation was done in **Python, with OpenCV, tum_simulator and ardrone_autonomy packages.**

Soft Processor   Feb – Mar 2021
Basic RISC processor implementation in FPGA board
- Implemented ALU, Program Counter, Main Memory, Registers, Displaying of numbers, and a Clock Divider.
- Written in **VHDL** and **Verilog** for the Intel DE10-Lite board.

Smart Home Access   October – December 2020
Face recognition-based home security system with backend API and webapp
- Collaborated in developing backend **Python** script for further deployment.
- Implemented communication between webcam and a Firebase server for face detection in **C++**

Isle Delfino Map   August – October 2020
Better traversal calculator in a simulated map, using data structures
- Developed Data Structures project with **C++.**
- Implemented adjacency matrices graphs, linked lists as queue, Red Black Trees, Splay Trees.

SKILLS

PROGRAMMING LANGUAGES

2 years: Python, MATLAB
1.5 years: C/C++
6 months: CUDA

TECHNOLOGIES

MySQL, Unix/Bash, SSH, Arduino, Firebase, Office 365, ROS, Ubuntu, Face_recognition API, VHDL

AWARDS

Won top 3 GPA in high school 2016-2019 generation.
Obtained Academic Talent scholarship in Tecnológico de Monterrey out of 200 participants for a BS Engineering
Top 10 Global GPA third semester in Tec de Monterrey Computer Science Department

ONLINE COURSES

Fundamentals of Parallelism on Intel Architecture (Intel, 2021) Operating Systems and You (Google, 2021), Your First Backend API and Database with NodeJS and AWS (Udemy, 2021), Public Speaking Workshop (ITESM, 2019), German A1-B1(UMQ, 2015 - 2020), Microsoft Excel 2013 (Testing Program, 2017).

EXTRACURRICULAR ACTIVITIES

Led investigation team for local security perception and analysis of the data with collaboration of local government.
Participated in competitions like ICPC #GranPremioMX2020 contest, Microsoft AI gaming Latino América group competition, Vex Robotics STEM.
Involved in Student groups in social activities, spreading tech news and organizing events.