# Israel Arroyo

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## EDUCATION

**Tec de Monterrey** Graduating in June 2023
*B.S. in Robotics and Digital Systems Engineering* *GPA 96.31 /100*

## EXPERIENCE

**Intel** September 2021 – September 2022
*Functional Validation Intern*
- Tested features with internal tools for a consumer product, in simulation and on a FPGA.
- Helped enabling RTL model in FPGA

**Tec de Monterrey** February 2020 – Present
*Grading Programming Languages, Social Service*
- Acquired teaching and analytical skills grading assignments in **Python, CUDA, Scheme and Data Structures in C++.**

**Tec de Monterrey** February – May 2021
*Robotics Classes for children, 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++

**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), Microsoft Excel 2013 (Testing Program, 2017).

**EXTRACURRICULAR ACTIVITIES**

Facebook ABCS Fall 2021 program
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.