Emmanuel Larralde Ortiz

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PROFILE

I am a Computer Science Graduate Student and Mechatronics Engineer with a background as a CPU Design Verification Engineer at Intel. In this role, I gained extensive experience in designing and testing digital microchips prior to manufacturing. My interests lie in Mobile Robots, Digital Electronics Design, and Deep Learning, with Python being my preferred programming language. I am enthusiastic about applying my knowledge and skills to contribute effectively to your projects.

WORK EXPERIENCE

CPU Design Verification Engineer **Intel Corporation** **(February 2023 – July 2024)**

- Design Verification of a novel Branch Prediction Unit of an experimental x86 CPU microarchitecture.
- Software development (python and C++) of a fine-grained simulator of the Branch Prediction Unit and the development of tools for performance analysis and CI/CD.

Technical Graduate Intern **Intel Corporation** **(January 2022 – January 2023)**

- Design Verification of the hardware accelerator for video compression (H.264, AV1, JPEG, etc.) of Intel Xeon Granite Rapids-D.

Robotics Software Engineering Intern **CIMAT** **(August 2022 – February 2023)**

- Development of autonomous driving software stacks for mobile robots.
- Design, development, and maintenance of mobile robots.

SKILLS

TECHNICAL SKILLS

PROGRAMMING LANGUAGES

Python
C/C++
Kotlin

TECHNOLOGIES

Productivity: Linux, shell scripting, Git & GitHub (with actions), Jenkins, Docker.
Robotics: ROS, OpenCV, NVIDIA Jetson, Gazebo, Simscape, Webots.
Embedded Systems: Microcontrollers, FPGAs, SBCs, embedded Linux.
Scientific: MATLAB, Mathematica, wolfram alpha, LaTeX.

SOFT SKILLS

Self-taught, Responsibility, Openness to feedback and Teamwork.

MAJOR PROJECTS

DonkieTown 2022

A low-cost experimental platform for research on Automated and Connected Vehicles.

- GitHub repository: https://github.com/L4rralde/DonkieTown
- DonkieNet: a retrained (transfer-learning) Mobilenet + SSD Neural Network for donkey-like teddy bears.
- Lane Following: k-d trees and vector fields.

EDUCATION

CIMAT August 2024 – Today
Master of Science in Computer Science. GPA in Progress

UPIITA-IPN August 2017 – December 2022
Bachelor of Engineering in Mechatronics Engineering. GPA 94/100
Mx license number (cédula): 14162443

AWARDS

First place at Mexican Tournament of Robotics (2023).

First place at Samsung's Solve for Tomorrow contest (2018).

Finalist candidate for the International Physics Olympiad (2017).

Silver Medal in the National Physics Olympiad (2016).