Rosnel Leyva-Cortes

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Skills Summary

- **Programming Languages**: Java, Objective-C, Python, Swift, Verilog
- **Languages**: English, Spanish, Mandarin Chinese
- **Tools**: GIT, Matlab, XCode, LTSpice, KiCAD, PCB prototyping & design, SolidWorks, Fusion 360

Education

- **Columbia University: Fu Foundation School of Engineering and Applied Science** — New York, NY
  B.S. Electrical Engineering — *Sep 2022 - May 2026*

- **Deerfield Academy** — Deerfield, MA
  GPA: 90.6 (2nd Percentile) — *Sep 2018 - May 2022*

Experience

- **Columbia University Formula Racing** — New York, NY
  High Voltage Assistant Chief Engineer — *Sep 2023 - Present*
  - **Oversee High Voltage Systems**: Assemble and assist design of PCBs for management of high and low voltage systems, Assist in battery pack and segment assembly
- **Columbia University: School of Social Work** — New York, NY
  Mathematics and Physics Tutor — *Mar 2023 - Present*
  - **Tutoring Services**: Academic tutor and mentor for the Achievement Initiative program with the Columbia School of Social Work at Frederick Douglas Academy II and assist students in group and individual settings in mathematics and general physics.
- **Compuworld Computer Service Center** — North Bergen, NJ
  Electronics Repair Technician — *June 2021 - August 2021*
  - **General Repairs**: Worked with a variety of hardware from laptops, cellphones, to industrial machines that were brought in for servicing and repair.
- **CODCO** — Deerfield, MA
  Computer Science Tutor — *May 2019-August 2020*
  - **Tutoring Responsibilities**:
    - Tutored middle school students 1-on-1 with a introductory computer science curriculum using java.
    - Tutored large group session for introductory computer science using python

Academic Projects

- **Girasol EEG**: Using an elementary electroencephalogram (EEG), I created a software library for using these devices to control the mouse cursor on Linux/MacOS systems with user's brainwaves. (May 2022)
- **FPGA Music Box** : Designed a module using Verilog and FPGAs to modify digital signals and output them as musical notes. (May 2022)
- **Guitar Pedal Project**: My team at Columbia University designed, simulated, and implemented a guitar pedal to create a "fuzzy sound" iconic in indie and classic rock. The project's comprehensive report, full schematics, PCB view, simulation files, and even a 3D-printable casing. (November 2022)
- **ASL Detection Model**: I created a series of jupyter notebooks for the detection of images possibly containing American Sign Language. Effectively utilizing simple machine learning models, similar to MNIST sample models, to achieve categorization of ASL. (June 2019)

Relevant Coursework

- Data Structures and Algorithms (Deerfield Academy 2023)
- Digital Logic and Computer Architecture (Deerfield Academy 2022)
- Intro to Artificial Intelligence w/ Python (Harvard University 2021)
- Solid State Devices and Materials (Columbia University 2023)