Eduardo **Sanchez**

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Skills

Software: Ansys HFSS, SystemVue, ADS, Altium, Proteus, Quartus, Cadence Allegro, LTSpice
Hardware: VNA, Signal Generator, Spectrum Analyser, Oscilloscope, Logic Analyzer
Scripting: Python, MATLAB, C++, Git/GitHub, Verilog/SystemVerilog, VHDL

Experience

RF Design Engineer Intern, Apple – *Cupertino, CA* Sep 2023 – Dec 2023

- Modelled EM behaviour of circuits using Ansys HFSS by creating isolated cutouts of RFFE boards for simpler analysis, integrating 3D components, and defining ports to produce S-parameters of the board cutout which were integrated with ADS
- Successfully designed and optimized matching networks for the development board using ADS tuning and optimization features to iteratively adjust component values for optimal performance and implemented Murata practical components library for more realistic performance, to minimize return loss at the operating frequency of the specific path for 5G NR and 4G LTE usage
- Collaborated with others to iteratively design PCB layout using Altium, to minimize wasted space, loss and RF leakage
- Ran tests on the PA evaluation board, while iteratively optimizing gain compression values to maximize efficiency while still meeting the regulatory compliance for ACLR emissions and EVM requirements

Software Engineer Intern, RxFood – *Toronto, ON* Jan 2023 – Apr 2023

- Developed a full-stack website using Python Flask and TypeScript React to streamline fax processing and appointment creation, resulting in a 50% reduction in processing time and increased efficiency for the team
- Implemented automatic deployment and user authentication using Google Cloud Platform, reducing deployment time by 40% and improving site uptime and security
- Integrated GCP with CI/CD tools such as Google Cloud Build and Google Kubernetes Engine, automating the deployment process and reducing deployment costs by 70%

Software Developer, Venngage – *Toronto, ON* May 2021 – Apr 2022

- Architected granular permissions library using PHP, providing more flexibility and customization options for user roles and allowing team owners to have increased control over team permissions
- Redesigned user homepage and subscription page and implemented these new designs to improve user experience and increase user retention by 7%

Projects

LTE Transceiver Uplink *github.com/EduardoSanchezzz/RFFEUplink*

- Designed the base station receiver and mobile transmitter, calculating optimal values of individual components to meet requirements on sensitivity, EVM and dynamic range while minimizing individual figures of merit.
- Utilized SystemVue to simulate channel path loss and real world performance and ensure requirements were being met

RISC-V Processor Visual Simulator *eduardosanchez.dev/cpu-flow*

- Developed a single-cycle RISC-V processor simulator using React and TypeScript to visualize instruction execution
- Enhanced usability by incorporating step-by-step execution, enabling users to inspect CPU behavior through each instruction cycle
- Implemented key CPU stages, including instruction fetch, decode, and execute, in a clear and interactive interface

Claw Machine Controller *github.com/EduardoSanchezzz/ClawMachineController*

- Developed a controller for a robot arm using VHDL which can be used to position an arm in 2 dimensions and deploy an extender
- Implemented a Moore State Machine to control movement using specified inputs
- Used structural, behavioural and data flow design

Education

University of Waterloo *Waterloo, ON*

Bachelor of Applied Science in Electrical Engineering Sep 2019 - Jun 2024

Master of Engineering in Electrical and Computer Engineering May 2025 - Apr 2027