Aaron Valdes

axv725@miami.edu
aaron3441@gmail.com
(786)-378-3054
draaronv.github.io
LinkedIn

EDUCATION

Bachelor

University of Miami
Major: Computer Engineering, Computer Science, and Chemistry
Cumulative GPA: 3.52
Engineering GPA: 3.71
Expected Graduation: Spring 2022

WORK EXPERIENCE

Micron: NVE Core Design: Software Engineering Internship

- **05/2021 to 08/2021**
- **Developed multiple programs to enhance the workflow of my team**
- **Responsibilities**
  - Developed by myself a project management tool for core simulation environment which provides my team members the ability to see the workflow of an entire project, check dependencies, visualize other team-members work, and modify simulation files
  - Building a Core database for simulation, trimming and competitive analysis with CAD team
  - Created multiple python scripts to enhance the workflow of simulation apart from the project management project

Louisiana State University: Research Assistant : Nanophotonics Simulation

- **05/2021 to 08/2021**
- **Optimized Multilayer Photonic Structures with Phase Change Materials**
- **Responsibilities**
  - Enhance the functionalities of the established simulation program to adapt to a phase change material
  - Work with OPENMPI to enhance the performance of our program
  - Run simulations on an HPC computer
  - Debug a multi-core program
- **Principal Investigator: Georgios Veronis (Louisiana State University Electrical Engineering Department)**

University of Miami: Research Assistant: Biophysics

- **10/2018 to 05/2021**
- **I perform various task with the goal of investigating the behavior of Fruit fly**
- **Responsibilities**
  - Analyzed and suggested theoretical explanations for the behavior of fruit larvae
  - Designed and optimized behavioral experiments in regards to electrical field
  - Troubleshoot LabView programs
  - Develop experimental assay
  - Train new members
- **Principal Investigator: Mason Klein (University of Miami Physics Department)**

University of Miami: Research Assistant: Computational Chemistry

- **11/2019 to 05/2021**
- **Developed programs to improve the efficiency of molecular dynamics simulations**
- **Responsibilities**
  - Running molecular dynamics experiments using the aenet package
  - Creating energy and force models using schNetPack, PhysNet, and TensorMol
  - Examining the accuracy and efficiency of the simulations using Matlab
  - Developing quantum computing program to run molecular dynamic experiments
- **Principal Investigator: Orlando Acevedo (University of Miami Chemistry Department)**

TECHNICAL SKILLS

Programming Languages

• High level

C++: Advanced
- OpenMPI
- Boost

Python: Advanced
- Keras
- Tensorflow
- Scikit-learn
- Matplotlib

• Low level

C: Advanced
- Sockets
- Embedded System

Arm assembly: Advanced

• Functional Programming

Haskell: Intermediate

• Statistical Analysis

Matlab: Advanced

R: Advanced

• Query

mySQL: Proficient

mongoDB: Intermediate

• Scripting Language

Bash: Advanced

CShell: Advanced

• Hardware Language

VHDL: Advanced

Verilog: Advanced

• Front-End

HTML: Proficient

CSS: Proficient

Javascript: Proficient

• Backend

Rust: Proficient

Go: Proficient

• Markup Language

Latex: Expert

Markdown: Advanced

• Tools

Vim: Advanced

GDB: Advanced

Jupyter_Notebook: Advanced

Source Code Management

Git: Advanced

SVN: Advanced

Helix Core: Intermediate

Operating System

• Linux

Debian: Ubuntu and Debian

Red Hat: Fedora, Cent OS, RHEL 8

Arch: Manjaro and Arch

CAD Software

• 3D Modeling

Fusion 360: Advanced

SolidWorks: Advanced

Autocad: Advanced

• Electrical Modeling

KiCad: Intermediate

Simulation Software

• Mechanical

SolidWorks: Advanced

Fusion360: Advanced

• Electrical

Quartus: Advanced

ModelSim: Advanced

Xilinx Vivado: Advanced

PsPice: Intermediate

• Virtualization

Virtual Box: Advanced

Qemu: Intermediate

• Containerization

Docker: Intermediate

Development Boards

- Raspberry Pi
- Jetson Nano
- Terasic DE1-SoC
- Digilent Nexys 4
- STM32 Nucleo
- TI MSP-EXP430 LaunchPad

Embedded System

- Lora Module
- Wifi Module
- Various Sensors
- Low Power Optimization

Electrical Skills

- Soldering
- Oscilloscope
- Circuits Analog/Digital / Mixed-Signal Design

RELEVANT COURSEWORK

Fall 2020

- Data Structures(Engineering Department)
- Processors: Hardware, Software, and Interfacing
- Structured Digital Design
- Electronics I

Spring 2021

- Principles of Artificial Intelligence
- Network Client-Server Programming
- Digital System Design and Testing
- Design-for-Testability Laboratory
- Introduction to Algorithms
- Communication Networks

Fall 2021

- Advanced Algorithms
- Systems Programming
- Operating Systems
- Software Engineering and Architecture
- Computer Engineering and Architecture
- Embedded Systems Design

String 2022

- Database Design and Management
- Software Design and Verification
- Programming Languages
- Introduction to DevOps
- Deep Neural Network
- Statistical Learning