

# Christopher P. Vasquez

Metairie, LA | (504) 236-4327 | chrispv@cox.net | chrispvasquez.github.io

## EDUCATION

### Louisiana State University (LSU), Baton Rouge, LA

May 2023

*Master of Science, Electrical Engineering*

GPA: 4.1

*Bachelor of Science, Computer Engineering*

*Bachelor of Science, Computer Science*

**Related Coursework:** Multicore Programming, Computer Architecture, GPU Programming, GPU Microarchitecture

## EMPLOYMENT

### Research Assistant: Fault Injections with Neural Networks

November 2022 – Present

*Louisiana State University, Baton Rouge, LA*

- Utilized fault injector to measure the reliability of various TensorFlow-based neural network architectures
- Wrote various Python & Bash scripts to automate testing and data collection
- Explored solutions to remediating instances of failure within neural networks based on collected data

### Research Assistant: CPU/GPU Acceleration with R

January 2022 – November 2022

*Louisiana State University, Baton Rouge, LA*

- Assisted with the development of a statistical, server-side application funded by the National Science Foundation
- Researched and implemented CPU acceleration for utilized R package ([MLMA](#))
- Currently researching the possibilities for GPU acceleration utilizing CUDA

### Software Engineer Intern

May 2021 – August 2021

*Runatek, Dallas, Texas*

- Worked on developing the software for a biomedical opioid device known as the SOTIRAS.
- Team lead for the software design and integration of a feedback control loop system into the device
- Developed software for an Arduino NANO, sensors, and actuators to monitor and maintain proper opioid levels

### Research Assistant: HPC with Python

December 2020 – December 2021

*Louisiana State University - Center for Computation & Technology, Baton Rouge, LA*

- Worked on an open-source, HPC Python project ([CMR Project](#)) funded by the National Science Foundation
- Implemented an automated package manager (Spack) into the project to better handle building coastal software
- Designed plug-in with scripts in Docker container to improve the modularity of importing models

## SOFTWARE PROJECTS

### Fault Injection Analysis for Neural Networks

Python, Tensorflow, Bash

### CNN Model for Music Genre Classification

Python, Tensorflow, Keras

### CNN Model for English to Spanish Translation

Python, Tensorflow, Keras

### Multiple Mediation Analysis Package with GPU Parallelization

R, LightGBM

### Multilevel Medication Analysis Package with CPU Parallelization

R

### Shift Reduce Parser Application

Python, PyQt5

### HPC Application: Coastal Model Repository (CMR)

Python, Bash, Jupyter Notebook, Docker

### Database System for Flight Delays

SQL

### Augmented Reality for Composite Manufacturing

C#, Arduino, HoloLens 2, Bluetooth

### Transaction System with Multicore Programming

C++

### Encoder & Decoder via Huffman Encoding

ARM Assembly

### Voltage Amplifier

OrCAD Pspice, Eagle PCB

### Motion Sensor Traffic Light via FPGA

Verilog

## SKILLS

**Languages/Interpreters:** C++, C, Python, C#, Java, Javascript, Dart, R, SQL, ARM & MIPS ASM, Verilog, Bash, Arduino

**Software Tech.:** Docker, Tensorflow, Jupyter Notebook, Anaconda, Sparx Enterprise Architect, LightGBM, OrCAD Pspice, Eagle PCB, Bluetooth, Vulkan

**Project Management Tools:** Git, JIRA, Asana

**Environments:** Linux, Windows, MacOS, HoloLens 2