

# Roberto Leon-Luna

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## EDUCATION

**University of Michigan, College of Engineering**

*BSE in Computer Science*

**Class of 2020**

Ann Arbor, MI

**Universidad de Navarra @ TECNUN**

*Micro-robotics & Spanish industries study abroad program*

May 2016-July 2016

San Sebastián, Spain/Pamplona, Spain

### **Languages:**

C++, Python, JavaScript

### **Frameworks:**

React, Vue.js, Flask, Apple AR Kit

### **Databases:**

MongoDB, SQL, Firebase

## WORK EXPERIENCE

**Viacom – Broadcast Systems Development**

June 2018-August 2018

*Software Engineer Intern*

New York, NY

- Developed a H265 video encoder written in C++ that converted YUV input files into H265 output files using the x265 software library
- Tested encoder on Trident play-out system to benchmark FPS that servers achieve using various encoder presets
- Presented test results on FPS to panel of executives and recommended that Viacom is not in a position to implement an H265 encoder into their play-out system

**University of Michigan – HaptiX Lab**

January 2016-September 2016

*Research Assistant for Ph.D. candidate Alex Russomanno*

Ann Arbor, MI

- Fabricated silicon refreshable braille displays using clean room technologies for use in testing
- Developed Arduino tool that analyzed the brightness of video clips to measure the response time of micro fluidic logic gates to air pressure fluctuations
- Optimized the response time of micro fluidic logic channels by 25% through testing with transducer and air gun

## ACADEMIC EXPERIENCE

**Mobile App Development for Entrepreneurs**

January 2020-April 2020

*Augmented Reality iOS App for Art*

- Designed, built, and tested an iOS mobile application using Swift, Apple AR Kit, and Firebase that allowed users to display multiple art pieces through an augmented reality view
- Performed customer research and design iteration in order to determine the UI layout and the back-end design
- Prepared and presented several presentations throughout the semester on the progress of the mobile application, design decisions for the mobile application, and customer research

**Web Systems**

September 2019-December 2019

*Instagram Web App*

- Developed a clone of the Instagram web app using Flask, SQL, and React
- Used Flask and SQL to build the back-end technology such as the database, URL routes, and REST API
- Used React to build client-side features that updated the front-end based on user input

*Map Reduce Implementation*

- Implemented map reduce using Python's sockets and threads libraries

*Information Retrieval*

- Used a Hadoop map reduce pipeline to process information and create an inverted index
- Created a search interface using React that queried results from PageRank API and displayed them to the user