

# JAKE ZAIA

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## EXPERIENCE

### Software Engineer

#### Herrick Technology Laboratories

May 2020 – Present Germantown, MD / Online

- Designs and implements API in Go/C++ that allows a radio to communicate through protobuf messages via REST calls or websockets
- Wrote firmware to interface with various sensors over UART and I<sup>2</sup>C
- Programmed FreeRTOS systems on a Nios II soft core
- Implemented transmission functionality for HTL radios utilizing the redhawk software defined radio framework
- Wrote and tested backend software supporting direction finding capabilities of a software defined radio

### Computer Science Tutor (Contractor)

#### Wyzant Inc.

May 2019 – December 2020 Online

- Taught various math and computer science topics to high school, college-age, and adult students
- Managed a schedule of clients located across multiple time zones

### Summer Intern for Mainframe Security

#### Morgan Stanley

July 2018 – August 2018 New York, NY

- Implemented an internal website to resolve mainframe issues
- Created a dynamic front end interface and worked to maintain a good user experience
- Communicated with bots running on RACF and TSS mainframes to query basic user information

## VOLUNTEER WORK

### Teacher's Assistant

#### Stuyvesant High School

January 2017 – June 2018 New York, NY

- Taught students various computer science topics
- Ensured students were engaged and focused on relevant tasks

### Sensei (Tutoring Center Manager)

#### Stuyvesant CS Dojo

September 2016 – June 2018 New York, NY

- Taught students various computer science topics
- Ensured all personnel focused and effective
- Established an open atmosphere for collaboration and teamwork
- Performed various hardware and software repairs

## LANGUAGES

C	● ● ● ● ●
Python	● ● ● ● ●
Java	● ● ● ● ●
C++	● ● ● ● ●
JavaScript	● ● ● ● ●
C#	● ● ● ● ●
Assembly (MIPS/Arm)	● ● ● ● ●
Ruby	● ● ● ● ●
Go	● ● ● ● ●

## TECHNICAL SKILLS

HTML + CSS	● ● ● ● ●
Python Flask	● ● ● ● ●
Linux Systems	● ● ● ● ●
Bootstrap/Materialize	● ● ● ● ●
EMACS	● ● ● ● ●
Bash Scripting	● ● ● ● ●
MongoDB	● ● ● ● ●
Digital Electronics	● ● ● ● ●
Systems Administration	● ● ● ● ●
RegEx	● ● ● ● ●
Qt	● ● ● ● ●
LaTeX	● ● ● ● ●
MATLAB	● ● ● ● ●
Protobuf	● ● ● ● ●
SQL	● ● ● ● ●

## Volunteer Tutor

### Computer Science and Technology for Urban Youth

📅 September 2016 — June 2018 📍 New York, NY

- Taught basic computing concepts in Processing-Java
- Engaged an audience to secure future funding
- Managed students to ensure order in a classroom

## PROJECTS

### Corundum Graphics Engine

#### Ruby, Python

📅 January 2018 — June 2018

A fully functional graphics engine built in Ruby that supports loading of .obj files and animation. Lighting utilizes the Phong reflection model, and graphics commands are handled by a custom language with its own lexer and parser.

### The Internet of Things

#### Python, JavaScript, HTML5, GCP

📅 October 2019 📍 Hack Upstate XIV

A fully deployed social networking web application that has users discuss, compare, and rate places and things anonymously. Uses Google Cloud Platform utilities to automatically parse image data for starting and grouping conversations.

### The Safety Gauntlet

#### Python, JavaScript, MongoDB, Arduino

📅 September 2019 📍 BigRed//Hacks

Wearable hardware that puts important environmental and safety information in the hands of first responders. The Arduino wearable communicates through Bluetooth Low Energy to a centralized server for data aggregation.

### Tamagogo

#### Python, JavaScript, HTML5, MongoDB

📅 February 2019 📍 BrickHack V

A web-based game about improving your community, both environmentally and socially. Users are rewarded for doing good deeds with virtual creatures.

### Grov

#### C#, MonoGame

📅 January 2019 — May 2019

A 3rd person shooter/exploration game with a cartoony style that has players exploring a procedurally generated enchanted forest. Features variable weapons, powerups, and intelligent enemies.

### Tapout

#### Python, JavaScript, HTML5, Firebase

📅 June 2018 📍 StuyHacks VI

A web-based rhythm game in the style of Jackbox Games that has players tapping out songs for one another to guess for points.

### Jammi

#### Python, JavaScript, HTML5, Firebase

📅 May 2018 — June 2018

A web app that allows multiple users to view a youtube video together, synchronized in real-time while having a comfortable chat via a chat room.

## AWARDS

**Winner: IBM Code & Response Challenge**  
Cusehacks 2020

**Best Use of Wolfram|Alpha API**  
HackRPI 2019

**Most Useless Hack**  
DandyHacks 2019

**Best Use of MongoDB**  
BigRed//Hacks 2019

**Best Game**  
StuyHacks 2018

**Golden Ducky Award**  
Stuyvesant High School (2018)

## ACTIVITIES

**RIT Linux User's Group**  
Secretary

**StuyHacks**  
Mentor

**RITSec**  
Member

**CodeRIT**  
Member

**Rockstar Esolang**  
Rockstar Developer

**Stuyvesant CS Dojo Website**  
Web Developer

**Cyberstuy**  
Workshop Captain

**Dungeons & Dragons**  
Player & DM

**FRC Robotics**  
Software Engineer

## EDUCATION

B.S. Computer Science  
**Rochester Institute of Technology**

📅 Aug 2018 — May 2023 (Expected)

GPA: 3.93 (4.0 in-major)

**Stuyvesant High School**

📅 Sept 2014 — June 2018

GPA: 3.7