

# JAKE ZAIA

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## EXPERIENCE

### Software Engineering Intern

#### MITRE

June 2021 – Present Bedford, MA (Remote)

- Implements and maintains a Flask API and React web frontend for projects supporting USAF research and practical applications
- Pitches and explains technical ideas to aid with user understanding
- Created a bootloader in C that securely loads example avionics firmware

### Computer Science Tutor (Contractor)

#### Wyzant Inc.

May 2019 – Present 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

### Software Engineer

#### Herrick Technology Laboratories

May 2020 – May 2021 Germantown, MD / Online

- Designed and implemented API endpoints in Go and C++ that communicate between a radio and remote client
- 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 red-hawk software defined radio framework
- Wrote and tested backend software supporting direction finding capabilities of a software defined radio

### 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 to maintain a good user experience
- Communicated with bots running on RACF and TSS mainframes to query basic user information

## VOLUNTEER WORK

### 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	● ● ● ● ●
HTML5 + CSS3	● ● ● ● ●
JavaScript	● ● ● ● ●
Java	● ● ● ● ●
C++	● ● ● ● ●
Assembly (MIPS/Arm)	● ● ● ● ●
C#	● ● ● ● ●
SQL	● ● ● ● ●
Rockstar	● ● ● ● ●
Ruby	● ● ● ● ●
MATLAB	● ● ● ● ●
Go	● ● ● ● ●

## TECHNICAL SKILLS

Python Flask	● ● ● ● ●
Linux Systems	● ● ● ● ●
Git	● ● ● ● ●
Bootstrap for CSS	● ● ● ● ●
EMACS	● ● ● ● ●
Bash Scripting	● ● ● ● ●
MongoDB	● ● ● ● ●
Valgrind + GDB	● ● ● ● ●
Embedded Systems	● ● ● ● ●
Servers & Networking	● ● ● ● ●
Digital Electronics	● ● ● ● ●
React	● ● ● ● ●

## 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

## Volunteer Tutor

### Computer Science and Technology for Urban Youth

📅 June 2017 – July 2017

📍 Brooklyn, 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 objects 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 2019

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.

### Linux SysAdmin



### RegEx



### LaTeX



### Qt



## AWARDS & CERTS

### Security Clearance

Issued 2021

### CPR License

Issued 2019

### 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

Rockstar Esolang – Rockstar Developer

StuyCS Dojo Website – Web Developer

Cyberstuy – Workshop Captain

Dungeons & Dragons – Player & DM

FRC Robotics – Software Engineer

## EDUCATION

B.S. Computer Science

Min: Computing Security & Mathematics

### Rochester Institute of Technology

📅 Aug 2018 – May 2023 (Expected)

GPA: 3.92

### Stuyvesant High School

📅 Sept 2014 – June 2018