

# Thomas McKanna

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## Summary

Computer Science student with experience in various programming languages and technologies, including full-stack web development, real-time robotics systems, and Infrastructure as Code tools. Passionate coder who likes to spend weekends solving competitive coding challenges. Interested in internship opportunities related to web development, mobile app development, or virtualization technologies.

## Education

### Missouri University of Science and Technology (GPA 4.0/4.0)

B.S. IN COMPUTER SCIENCE

Rolla, MO

Dec 2020

## Experience

### Mastercard

CORPORATE SECURITY INTERN

O'Fallon, MO

Summer 2019

- Implemented a web backend using **Flask** which parsed form data to create virtual infrastructure with **Terraform**, pushed status updates to web clients with **Redis**, and used the **Apache Guacamole** API to allow for interaction with the newly created infrastructure over a web browser.
- Utilized ORM tool **SQLAlchemy** to store web application state data in a **PostgreSQL** database.
- Created a drag-and-drop web interface using **Bootstrap** and **jQuery** which allowed for the easy deployment of over 100 virtual hacking environments in a matter of minutes.
- Collaborated with a team of interns to create an educational hacking environment which demonstrated ransomware, Remote Access Trojans (RATs), and malicious Microsoft Office macros.
- Contributed to various web applications and **Ansible** scripts for use in the Cyber Defense Exercise, a cybersecurity competition in which several Fortune 500 companies in the finance sector compete.

### Maryville University Cyber Fusion Center

SECURITY ANALYST

St. Louis, MO

Fall 2016 and Spring 2017

- Collaborated with other students to perform basic penetration testing for local charities, school districts, and small businesses using **Kali Linux** and **Nessus**.
- Contributed to the writing of penetration test reports and Standard Operating Procedures (SOPs).
- Discovered and reported an improperly configured accounting tool which revealed business credit card numbers on one client's website.

### LaunchCode

TEACHER'S ASSISTANCE - INTRODUCTION TO COMPUTER SCIENCE

St. Louis, MO

Summer 2016

- Assisted professor in a 10-week, fast-paced coding boot camp based on Harvard's CS50 edX course on the fundamentals of data structures and algorithms.
- Taught students about programming in C, Java, HTML, and JavaScript during office hours.
- Supported professor by grading assignments and answering questions in online course forum.

## Extracurricular Activity

### Multirotor Robot Student Design Team

SOFTWARE DEVELOPER

Rolla, MO

Aug. 2018 - Present

- Applied the principles of **Object-Oriented Design** to implement the core flight logic for autonomous drones in preparation for the International Aerial Robotics Competition (IARC).
- Utilized flight control framework **ArduPilot** in conjunction with the **MAVLink** protocol **DroneKit API** to control the flight of drones with **python** code.
- Implemented collision avoidance routine using a Scansense lidar and the python threading module.
- Evaluated flight code using the **Gazebo** robot simulation platform.

### ACM Coding Competition Student Organization

WEBSITE ADMINISTRATOR AND MEMBER

Rolla, MO

Aug. 2018 - Present

- Create and maintain a website using **Jekyll** and **Github Pages** to provide a convenient online location for viewing the organization's schedule of events, coding articles, and educational resources.
- Implemented a weekly-updated scoreboard which uses python to scrape the coding challenge website Kattis for the scores of each club member.
- Solved **over 180** coding challenges on Kattis in preparation for the International Collegiate Programming Competitive (ICPC).