

# Thomas McKanna

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## 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 on an 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 and the **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).

## Technical Skills

**Languages:** Python, C++, Bash, HTML, JavaScript, SQL

**Tools:** Git, Latex, Ansible, Terraform, VMware vSphere, Vim, VS Code

**Certifications:** CompTIA Network+, CompTIA Security+