

# Thomas McKanna

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## Summary

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Current 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

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

B.S. IN COMPUTER SCIENCE

Rolla, MO

Dec 2020

## Experience

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### Mastercard

CORPORATE SECURITY INTERN

O'Fallon, MO

Summer 2019

- Implemented a web backend using **Flask** which parsed form data in order to create virtual infrastructure with **Terraform**, pushed status updates to web clients with **Redis**, and then 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 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 in 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

St. Louis, MO

SECURITY ANALYST

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 testing reports and Standard Operating Procedures (SOPs).
- Discovered an improperly configured accounting tool on one client's website which resulted in leaked business credit card numbers.

### LaunchCode

St. Louis, MO

TEACHER'S ASSISTANCE - INTRODUCTION TO COMPUTER SCIENCE

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.
- Helped students learn 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

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### Multirotor Robot Student Design Team

Rolla, MO

SOFTWARE DEVELOPER

Aug. 2018 - Present

- Utilized an **Object Oriented Design** to implement the core flight logic for autonomous drones in preparation for the International Aerial Robotics Competition (IARC).
- Used 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 Scense lidar and the python threading module.
- Tested flight code using the **Gazebo** robot simulation platform.

### ACM Coding Competition Student Organization

Rolla, MO

WEBSITE ADMINISTRATOR AND MEMBER

Aug. 2018 - Present

- Create and maintain a website using **Jekyll** and **Github Pages** to provide a convenient online location for viewing 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).