



School of Computing & Information Sciences

A Novel Edge-based Computer Vision Application for Workforce Performance Optimization

Student: Alexa Joanna Gonzalez, Florida International University
Mentors: Nima Schei, Felipe Cuento, David Pabon, Andres Beltrain
Instructor: Masoud Sadjadi, Florida International University

PROBLEM

Hummingbirds AI video-based application, GuacamoleID, was prone to certain vulnerabilities. The company gave me the opportunity to research certain vulnerabilities and present them to their developing team.

REQUIREMENTS

The requirements for this problem required me to research different topics every two weeks and create either a report or a PowerPoint to showcase the findings. The topics included:

- Python code security
- Python libraries
- Python code protection
- AI in cyber security
- Desktop vulnerabilities
- Qt Framework vulnerabilities
- Qt cross platforms
- APK vulnerabilities
- QT for desktop applications
- C++ signals with Qt Slot

The goal was to complete research on all topics discussed during a meeting with the developers.

MY ROLE

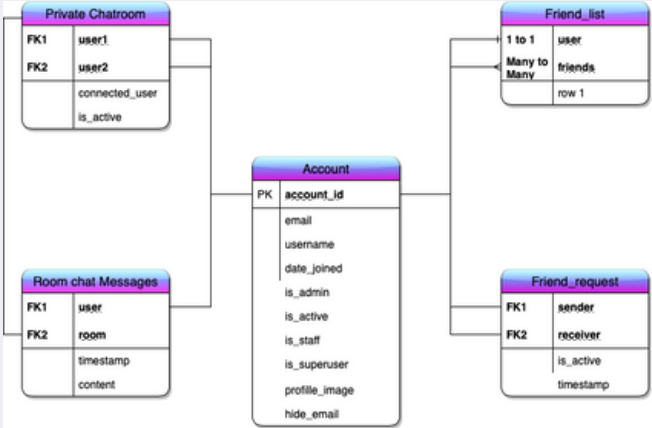
My role included creating documentation for the research I found, scheduling a meeting with the developers, and presenting the findings. This happened every two weeks so as to give me time to research the vulnerabilities with the programming language, frameworks, and the technology they were using at the time.

VERIFICATIONS

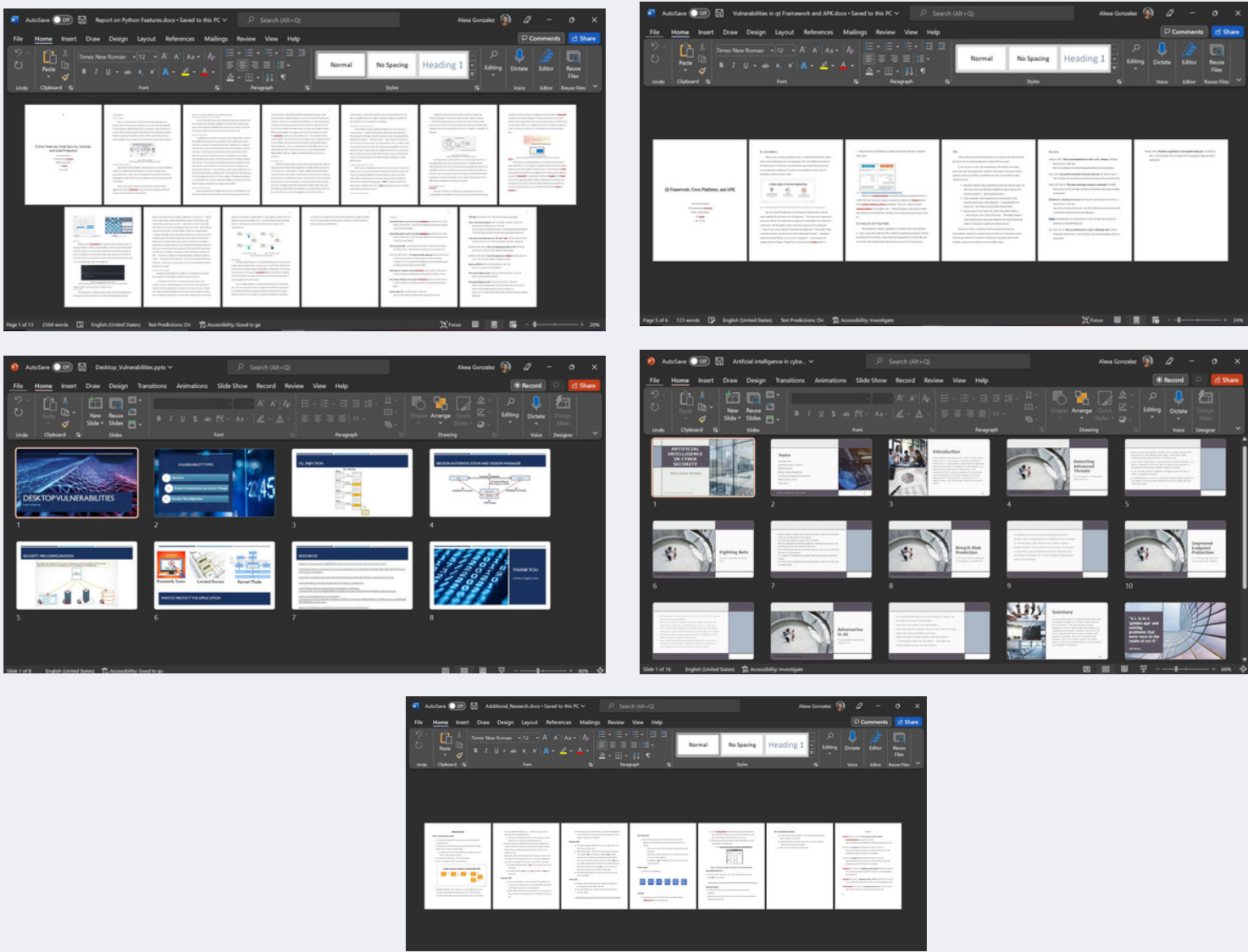
In order to improve the research I was proving the company, I met with Felipe to receive constructive criticism on what areas I should devote more focus and which areas to abandon. In essence, he would help me tailor the research to what the company deemed critical to what they were working on the week I presented the findings.

RECOMMENDATIONS

The company and my team members utilized the research I provided to assure the best security for the company's clients, particular when designing the system design. The purpose of this research was for all parties to be informed about cyber attacks.



SCREENSHOTS



SUMMARY

This opportunity to research and provide information about different topics to real developers helped me understand the importance of valid, focused research. This experience open my mind and allowed me to explore and learn about different topics ranging from Python, libraries, frameworks, and vulnerabilities.

Acknowledgments: I would like to thank Felipe Cuento for always providing me with the necessary information and constructive criticism. Nima for allowing us to learn alongside his company. Our instructor for providing us with this opportunity. And my teammates for always meeting deadlines as best we could.