Kiana Kiashemshaki – Project Portfolio

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Introduction

I am a passionate and detail-oriented computer scientist specializing in Cybersecurity.
With a solid foundation in systems, networking, and infrastructure and a passion for building secure, reliable environments. My work centers on infrastructure design, cloud integration, and security best practices. I enjoy solving technical problems, improving system reliability, and strengthening IT operations for teams.

Projects

1 - Title: Piqniq – Emergency Support for Panic Attacks (2nd Place Winner – BGSU ACM Hackathon)

Skills: TypeScript, CSS, JavaScript, HTML, Google Maps API.

Description: Developed a mobile web app to assist individuals during panic attacks. With one tap, users can send real-time alerts and location to emergency contacts. The app features a calming interface, virtual assistant, and breathing guide to reduce stress while help arrives.

Link: Piqniq
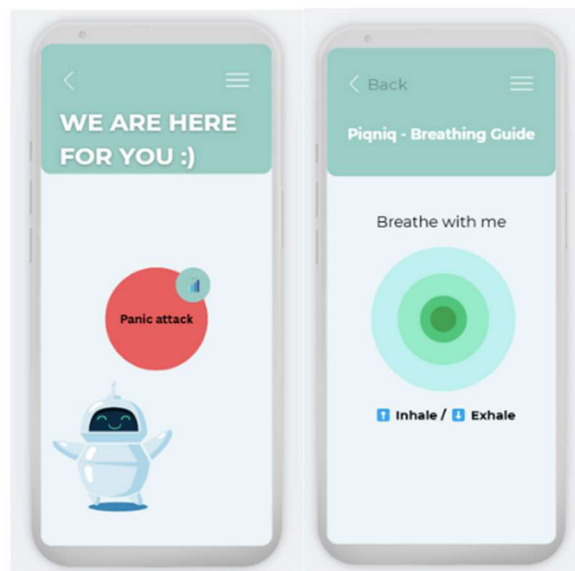
2 - Title: Comprehensive Analysis of Factors Affecting Mathematics Learning in Higher Education

Skills: Python, Pandas, NumPy, scikit-learn, Matplotlib, Statistical Analysis.

Description: Conducted an in-depth analysis of factors influencing mathematics learning outcomes in higher education. Utilized statistical testing and machine learning techniques to predict performance trends and cluster similar behaviors. This project provided actionable insights into enhancing educational strategies for students.

Link: Math App
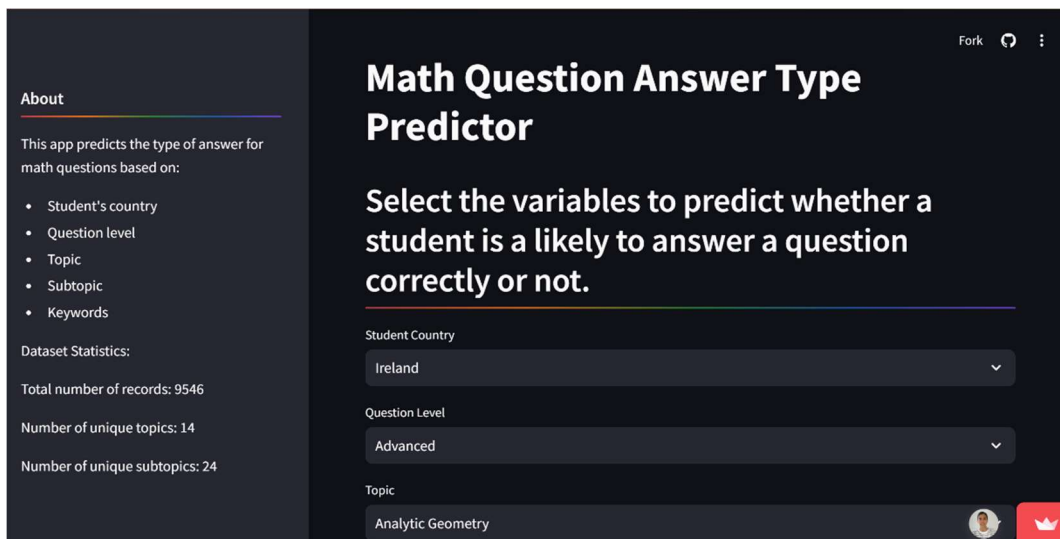
3- Title: Developing Hands-On Modules on Digital Forensics

Skills: Autopsy, Kali Linux, FTK Imager, Volatility

Description: Designed beginner-friendly educational modules focused on digital forensics. Topics covered hard disk forensics, memory forensics, and Android phone investigations. The modules aimed to make complex forensic concepts accessible while encouraging practical learning.
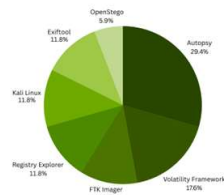
Link: Digital Forensics

Developing Hands-on Modules on Digital Forensics for the Future Students

M.S in CS Kiana Kiashemshaki
Supervised by Dr. Roy

Introduction

- Preparing hands-on projects for Digital Forensics courses is challenging because it demands realistic artifacts reflecting current technologies and scenarios also it takes a lot of time.
- Project Goal: Provide realistic and educational hands-on modules involving Windows computers and Android phone forensic training.
- Existing CTF artifacts from Magnet Axiom are valuable but not beginner-friendly.
- Enhancing these artifacts with guided questions and instructions can make them suitable for new learners.

Usage of Digital Forensics Tools

- OpenStego 5.9%
- Autopsy 29.4%
- Exiftool 11.8%
- Kali Linux 11.8%
- Registry Explorer 11.8%
- FTK Imager 11.8%
- Volatility Framework 17.6%

Methodology

- **Analyzing the CTF artifacts :** Got relevant CTF challenges from public sources e.g., Magnet Axiom 2020 CTF.
- **Breaking down the hard CTF problem into multiple easier problems:** For each smaller challenge prepared detailed guidelines for a beginner student.
- **Integration:** Develop one project out of each smaller challenge and integrated these together as a final project.
- **Testing:** Ensured everything is working accurately and matches the intended outcomes.
- **Keys for the future instructor:** Provide the solutions for each problem to assist future instructors.

A Digital Crime Scene

Evil
Mallory
Organization X
Bob
Student
Android Phone Image
Windows Memory Image
Windows Hard Disk Image

Q1: Which app Evil and Mallory used to decide the cyber attack plan?

Q2: What is the name of the malware file that Evil emailed to Bob?

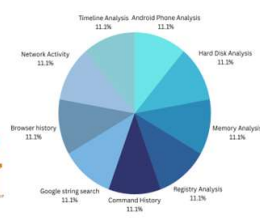Q3: What gambling website Bob used on his office computer?

Conclusion and Result

- Created four hands-on forensic modules focusing on Hard Disk forensics, Memory forensics and Android forensics.

Future work

- Develop realistic Windows-based forensic artifacts from scratch with EWF techniques to reduce storage size.

Subdomains of Digital Forensics

- Timeline Analysis 11.1%
- Android Phone Analysis 11.1%
- Network Activity 11.1%
- Hard Disk Analysis 11.1%
- Browser history 11.1%
- Memory Analysis 11.1%
- Google string search 11.1%
- Command History 11.1%
- Registry Analysis 11.1%

Acknowledgments

I would like to express my gratitude to my supervisor, Dr. Roy, for his invaluable guidance, support, and encouragement throughout this project.

BGSU. Department of Computer Science
BOWLING GREEN STATE UNIVERSITY

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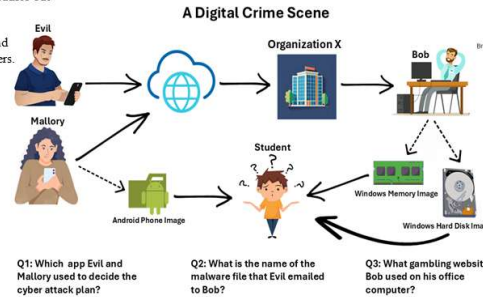
4 - Title: SQL Injection Vulnerability Testing on DVWA (Damn Vulnerable Web Application)

Skills: Kali Linux, Penetration Testing, SQL Injection, Web Application Security

Description: Conducted a comprehensive vulnerability assessment on the DVWA focusing on SQL injection techniques. Tested various payloads to manipulate SQL queries and reveal sensitive data from the database. Explored basic and advanced injection methods, uncovering user information, password hashes, and metadata. This project sharpened my skills in web application security, SQL injection exploitation, and ethical hacking.

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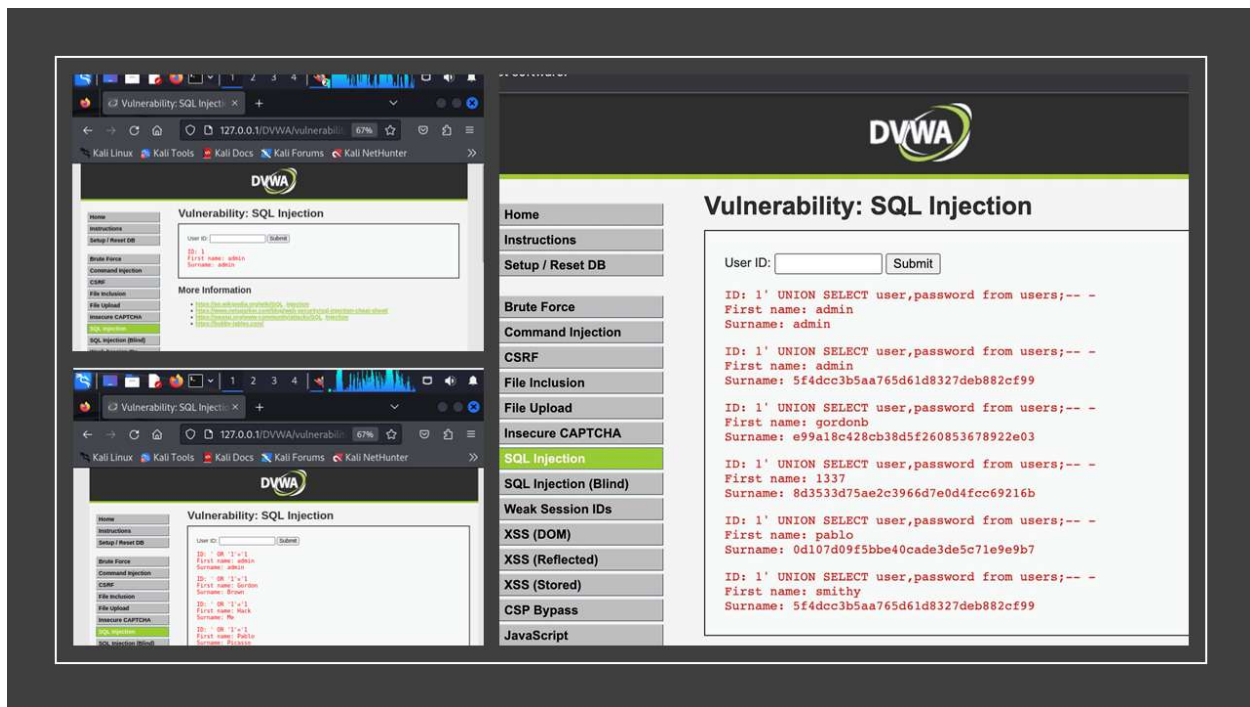
5 - Title: Water and Soil Analysis Visualization

Skills: HTML, CSS, JavaScript, D3.js, Bootstrap.

Description: Developed interactive and dynamic visualizations for field data related to water and soil behaviors. The project allowed scientists and researchers to explore and analyze experimental data in a visually engaging and intuitive manner.

Link: [Visualization](#)

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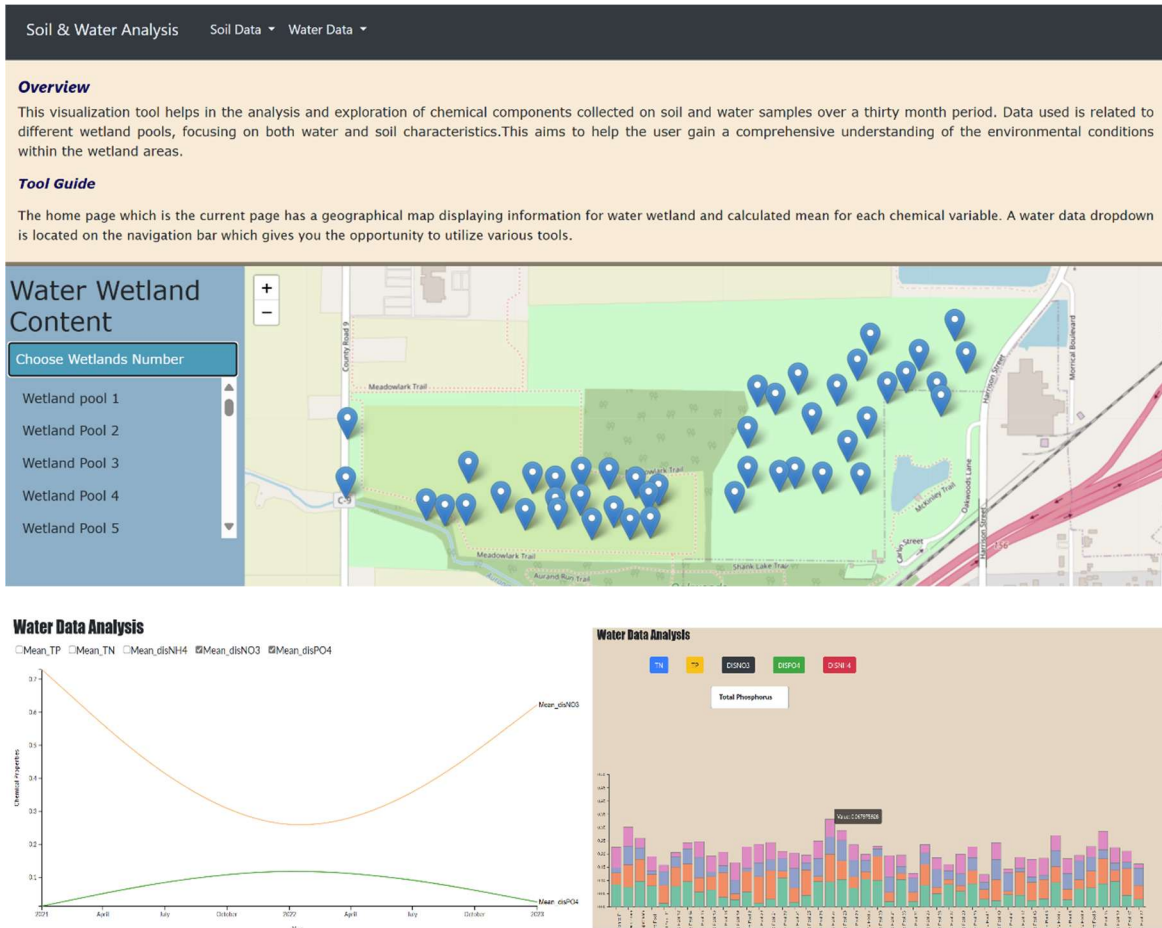
6 - Title: South America Country Analysis

Skills: HTML, CSS, JavaScript, D3.js, Bootstrap.

Description: Created a data visualization tool to explore socio-economic and geographic datasets from 12 South American countries. The project utilized interactive charts and maps to reveal patterns and regional insights effectively.

Link: Visualization

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7 - Title: Face Detection Application

Skills: Python, Flask, OpenCV, MTCNN.

Description: Built a user-friendly web application that enables face detection in uploaded images. Leveraged the MTCNN algorithm for precise recognition, ensuring a seamless user experience through an intuitive interface.

Link: Repository access

Project Description

Hi, I'm Kiana Kiashemshaki. This project detects facial emotions using the FER library in Python, integrated with Flask and OpenCV. Upload an image, and it will highlight faces and display the detected emotions (like smiles), along with predicted age and gender. This project showcases a simple yet effective implementation of facial detection, emotion recognition, and age/gender estimation, which is a good example of leveraging deep learning for real-world applications.

Upload Image

Choose an image:

Choose File | No file chosen

Upload