Aneef Sheriff

Professor Edwin Reed-Sanchez

Cybersecurity Project CSN 190

23 September 2025

Deep Dive Resource Analysis

**Topic 1: Automated Vulnerability Assessment Tool Development (Project - Build Python tool)**

**Resource 1:**

* **Citation:** Srinivasan, M., Premod, N., Prakash, S., Shobarani, R., & Priyanka, G. (2024). Automated Vulnerability Assessment Tools. IJSART Journal.
* **Type:** Academic Article
* **Synopsis:** Describes a Python-based system integrating Nmap, Nikto, and UniScan for comprehensive web vulnerability scanning.
* **Link:** https://ijsart.com/public/storage/paper/pdf/IJSARTV10I383619.pdf
* **Relevance:** 5/5 - This article has exposed me to the process of creating an automated vulnerability assessment tool.

**Resource 2:**

* **Citation:** PeerDH Team. (2024). Developing a Python-Based Tool for Automated Vulnerability Scanning and Reporting.
* **Type:** Academic Article
* **Synopsis:** This article provides a practical guide to building a Python vulnerability scanner using Nmap, requests, and BeautifulSoup, with modular architecture and reporting.
* **Link:** https://peerdh.com/blogs/programming-insights/developing-a-python-based-tool-for-automated-vulnerability-scanning-and-reporting-2
* **Relevance:** 5/5 - This article is very detailed and lists the step-by-step instructions on how to build an automated vulnerability scanning and reporting tool using Python.

**Resource 3:**

* **Citation:** Channel: Vinsloev Academy
* **Type:** YouTube Video
* **Synopsis:** Learn to build a lightweight CVE scanner using Python and the NVD API. Covers severity scoring with CVSS and practical automation for ethical hacking.
* **Link:** https://www.youtube.com/watch?v=EgmHjgmAGfs
* **Relevance:** 5/5 - This video shows the steps needed to build the tool my project is based on.

**Resource 4:**

* **Citation:** Channel: Vinsloev Academy
* **Type:** YouTube Video
* **Synopsis:** Covers Python automation for file scanning, network ping scanning, and OSINT scraping. Great for beginners building cybersecurity tools.
* **Link:** https://www.youtube.com/watch?v=cjdIIwUZsAg
* **Relevance:** 5/5 - The video is a great beginners guide and shows the steps needed in detail.

**Topic 2: AI-Powered Phishing Detection System (Project - Develop detection tool)**

**Resource 1:**

* **Citation:** Kumar, A., & Singh, R. (2025). AI-powered phishing detection and prevention using DistilBERT and ensemble classifiers. International Journal of Creative Research Thoughts, 13(9), 5120.
* **Type:** Academic Article
* **Synopsis:** This study combines DistilBERT embeddings with handcrafted URL features and ensemble classifiers (Random Forest and XGBoost). It achieves high precision and recalls on a large dataset of phishing URLs. The hybrid approach enhances detection accuracy and robustness against obfuscated phishing attempts
* **Link:** https://ijcrt.org/papers/IJCRT25A5120.pdf
* **Relevance:** 5/5 - This article has plenty of knowledge that I can use for my project. There is a lot of information that I did not know in this article.

**Resource 2:**

* **Citation:** Rao, S., & Patel, M. (2023). Email phishing detection using NLP and deep learning techniques. World Journal of Advanced Engineering and Technology Sciences, 2(4), 284.
* **Type:** Academic Article
* **Synopsis:** This research integrates NLP preprocessing with CNN and LSTM architectures to detect phishing in emails. It uses tokenization, context analysis, and semantic features to achieve 97.5% accuracy. The model is designed for real-time deployment in enterprise email systems.
* **Link:** https://wjaets.com/sites/default/files/WJAETS-2023-0284.pdf
* **Relevance:** 5/5 - This article has plenty of knowledge that I can use for my project. There is a lot of information that I did not know in this article.

**Resource 3:**

* **Citation:** Channel: Asim Gul
* **Type:** YouTube Video
* **Synopsis:** Summary: A full project tutorial using BERT from Hugging Face to detect phishing emails. Covers tokenization, fine-tuning, evaluation, and deployment.
* **Link:** https://www.youtube.com/watch?v=AT857mWvl0g
* **Relevance:** 5/5 - The video is about a similar Python project that my project is based on. Very useful.

**Resource 4:**

* **Citation:** Channel: AI Tech Hub
* **Type:** YouTube Video
* **Synopsis:** A conceptual and practical overview of how AI and ML are used to detect phishing threats. Includes real-world examples and tips for recognizing phishing attempts.
* **Link:** https://www.youtube.com/watch?v=93WliZOjQ-4
* **Relevance:** 5/5 - This video gives an overview of using AI to detect phishing attempts. I learned a lot of new information.