Anish Vempaty

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Summary

Recent MS in Cybersecurity graduate from NYU with hands-on experience in secure backend development, cloud infrastructure, and threat detection. Skilled in designing scalable, serverless systems using AWS and containerized pipelines, and proficient in vulnerability assessment, penetration testing, and network security. Passionate about solving real-world security and engineering challenges through clean, maintainable code.

Experience

SRMIST Chennai, India
Data Engineer Intern Jun 2022 – Dec 2022

- Developed automated web scraping tools to collect alumni data (Name, Phone, Address) from LinkedIn for graduates (1985–2015).
- Designed ETL pipeline to clean, extract, and organize large datasets for institutional outreach.
- Enhanced data collection efficiency by implementing robust error handling and batch processing.

Foxmula Corp Bengaluru, India
Cybersecurity Engineer Intern Dec 2020 - Feb 2021

- Developed a Confidential Image Communication System combining chaos-based encryption with AES in Python, reducing encryption/decryption time by 10%.
- Directed a team of 4 people to reduce time taken to encrypt and decrypt the image.
- Upgraded data processing pipelines using multithreading and efficient I/O handling in Python, improving data flow efficiency by 5%.

Verzeo Tech Bengaluru, India
AI Engineer Intern April 2020 - June 2020

- Engineered an application focusing on real time Traffic and Pedestrian Accident Detection using Python, OpenCV, and a YOLOv3-based object detection, increasing detection accuracy from 84% to 93% by fine-tuning model hyperparameters.
- Deployed the system with a Flask-based monitoring dashboard and implemented asynchronous logging to reduce system downtime by 5%.

Projects

Edge Device Cyber Threat Detection Using ML

- Built a smart security system using Python, Scapy, and Streamlit to detect cyber threats in real time by analyzing internet traffic.

Education

New York University NY, USA
MS, Cybersecurity 2023 – 2025

- CGPA - 3.7 / 4
- **Awards**
  1. Volcano Project security self-assessment
  2. NYU Scholarship
  3. Gyandhan Scholarship

SRMIST Chennai, India
B.Tech, CSE 2019 – 2023

- CGPA - 9.27 / 10

Skills

Python · TensorFlow · PyTorch · Scikit-learn · OpenCV · MLflow LangChain · HuggingFace · RAG · Airflow · Reinforcement Learning · CNNs · LSTMs · NLP · Deep Learning Computer Vision · Object Detection · Feature Extraction · Edge ML · Raspberry Pi · Sensor Input Handling Real-Time Inference · Model Tuning · LLMs · GenAI · Microcontrollers

Java · C/C++ · JavaScript · SQL · PHP NoSQL · Flask · FastAPI · REST APIs · Git · Postman · Docker · Kubernetes · CI/CD · Jenkins · GitHub Actions AWS · System Design · Debugging Linux · ARM · x86 Architecture BIOS · Bootloading · Kernel

Penetration Testing · Threat Modeling Vulnerability Assessment · Metasploit Wireshark · Burp Suite · Nmap · Snort Cryptography · Network Security · RiskAssessment · VPNs · SIEM · SOAR MITRE ATT&CK · Cyber Kill Chain Threat Hunting · Threat Intelligence

- Trained classification models (Random Forest, SVM) on public datasets like CICIDS and NSL-KDD to distinguish malicious from benign traffic.
- Deployed the trained model on Raspberry Pi 5, enabling lightweight, on-device threat detection with low resource overhead.
- Used Scapy to capture internet packets and extract features, and Streamlit to build a live dashboard for monitoring threats visually.

Cloud-Based Source Code Vulnerability Detector (AWS)

- Developed a cloud-native security tool to scan GitHub repos for vulnerabilities using Python and Semgrep, with optional AI remediation using Gemini.
- Designed a serverless architecture using AWS Lambda, SQS, SES, API Gateway, and DynamoDB to ensure scalability and async processing.
- Built a secure REST API to trigger scans, cache results by commit ID, and send AI-generated reports via email using SES.
- Implemented caching logic and decoupled remediation workflows using SQS queues and dual Lambda functions.
- Deployed a static frontend on S3 and integrated with API Gateway for real-time result viewing and scan submission.

3D Scene Reconstruction from Single Camera Video

- Implemented a 3D reconstruction pipeline from a single-camera input video using Python, COLMAP (Structure-from-Motion), and PyTorch.
- Extracted video frames using OpenCV and FFmpeg, processed them with COLMAP for camera pose estimation and sparse point cloud generation.
- Applied MiDaS/DPT-based monocular depth estimation and converted outputs into 3D point clouds.
- Generated photorealistic 3D scene representations using Neural Radiance Fields (NeRF), training with PyTorch.
- Visualized reconstructed 3D scenes in Python using Matplotlib and PyTorch3D, making the system interpretable even for non-technical users.

Volcano Project Security Self-Assessment

- Conducted a full security self-assessment on the Volcano CNCF project as part of NYU's "Internet Security and Privacy" course.
- Followed CNCF Security Assessment Handbook and evaluated the project across three stages: threat modeling, code review, and deployment risks.
- Identified key security gaps, misconfigurations, and areas of improvement, delivering actionable mitigation strategies.
- Earned a merit-based scholarship for the quality and depth of the assessment report.

SIEM (Splunk) · DLP · Access Control
Secure Boot · Embedded Linux ·
Logstash · Gostash · Chronicle
Scapy · Packet Analysis · HSM

Data Engineering · Data Pipelines ·
ETL · Batch/Stream Processing
Apache Kafka · Apache Spark ·
Hadoop · HDFS · Redshift · BigQuery
Airflow · SQL/NoSQL Optimization ·
Data Modeling · Pandas

Android Studio · Kotlin · XML Layouts
RecyclerView · Room DB · Firebase ·
LiveData · Jetpack Components
REST APIs · UI Design

CERTIFICATIONS

2025 **CompTIA Security+**
Candidate ID: COMP001022823841

2022 **Building Web Applications in PHP, University of Michigan**
BXE45B434J2T

2021 **Microsoft Technology Associate (MTA): Security Fundamentals**
Credentials

2021 **PadhAI Deep-Learning**
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