Mohammed Annan, MSc Student

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LINKS

LinkedIn, IEEE Publication, IJRESM journal

PROFILE

MSc Cyber Security graduate (Merit, Distinction in Dissertation) from the University of York with 3+ years of experience in secure backend engineering, AWS cloud infrastructure, and threat assessment. Built a red-blue team simulation lab for enterprise networks using Wazuh SIEM, Sysmon, and Redline for real-time detection, forensics, and IOC mapping. Skilled in VA/PT, ISO 27001 and GDPR compliance, and secure cloud-native system design. Passionate about scalable security, threat mitigation, and automation.

EMPLOYMENT HISTORY

Nov 2024 — Present

International Student Ambassador, School for Business and Society, University of York

York, UK

- Represent the university and assist prospective and current international students by providing guidance on academic and campus life.
- Conduct campus tours, student panels, and outreach events to support student engagement.
- Act as a liaison between students and university departments, ensuring clear communication and a positive student experience.
- Support marketing and recruitment efforts by sharing insights on student life through social media and events.
- Develop strong interpersonal, leadership, and cross-cultural communication skills while working with a diverse student body.

Mar 2023 — Sep 2024

Senior Software Engineer, Intech additive solutions pvt ltd.

Bengaluru, India

- Directed the migration from traditional EC2/S3-based infrastructure to a serverless architecture using AWS Lambda, Route 53, Cognito, and Fargate, reducing cloud infrastructure costs by approximately 38%.
- Executed vulnerability assessments and penetration testing using OWASP ZAP, Burp Suite, and Nmap, remediated critical issues, ensured compliance with GDPR, ISO 27001, and SOC 2, and boosted client trust, leading to a 25% increase in enterprise client conversion.
- Engineered a centralized logging and monitoring stack using FastAPI and AWS services, cutting issue detection and resolution time by nearly 45% through enhanced auditability and fault tracing.
- Optimized compute resources by deploying GPU-intensive FastAPI applications to Kubernetes on EC2, then transitioning to AWS Fargate, resulting in a 35% reduction in compute costs.
- Developed full-stack cloud-native applications using React, FastAPI, and PostgreSQL, applying test-driven development and integrating AWS services to deliver scalable, secure, and production-ready solutions.
- Streamlined deployments by containerizing production environments and automating CI/CD pipelines on Azure DevOps, accelerating delivery by 40% and enhancing cross-team integration.

Jan 2021 — May 2022

Software Engineer, Nighthack Labs

Bengaluru, India

- Collaborated on a secure machine learning pipeline to extract chemical entities from patent documents; containerized and deployed models (Random Forest, AutoML, Biobert) as hardened APIs using Docker and AWS, ensuring confidential data processing and access-controlled inference endpoints.
- Improved model reliability and accuracy from 82% to 97% by optimizing feature extraction using RDKit and Mol2Vec, while maintaining data integrity and provenance throughout the pipeline.
- Discovered and documented high-severity vulnerabilities in InvensisPay, a payment gateway platform, using OWASP ZAP, JMeter, and Burp Suite. Led secure coding practices that mitigated risks and reinforced backend resilience against common web attacks.
- Wrote secure backend services for Edstellar and Silaé ESG platforms using FastAPI and Rails. Implemented authentication flows and data validation to ensure compliance with secure coding standards.
- Built UI components with a security-conscious design that reduced attack surface through input sanitization and secure session management practices.
- Practiced Agile development with a focus on security. Integrated threat modeling into sprints, managed Jira workflows, and documented APIs using Postman to ensure traceability and security-by-design.

Feb 2020 — May 2020

Intern, Epic.one

Bengaluru, India

- Built a secure OAuth 2.0 prototype using Django to delegate user authentication — ensuring confidential access control and reducing identity management risks.
- Developed and extended microservices for a COVID-19 campaign system using Rails, Sinatra, and FastAPI — enforced input validation and modular security in a distributed architecture.
- Deployed a centralized ELK stack (Elasticsearch, Logstash, Kibana) — improving system auditability and real-time log analysis for anomaly detection and incident response.
- Implemented secure data flows using Alembic for migrations, SQLAlchemy for ORM queries, Redis for caching, and Cassandra/MongoDB for distributed, fault-tolerant storage.

EDUCATION

Sep 2024 — Sep 2025

MSc Cyber Security, University of York

Heslington, York

- Modules include: Cryptography, Digital Forensics, Secure Network Systems, Malware Analysis
- Dissertation: *Simulated Cyber Attack and Defense Lab for Enterprise Networks*
  - Built a red-blue team simulation lab with Windows and Linux environments, Active Directory, and firewall (pfSense), enabling end-to-end attack emulation and real-time detection.
  - Conducted attacks using Kali Linux, Metasploit, Mimikatz, and nmap, mapping techniques to the MITRE ATT&CK framework.
  - Monitored events using Sysmon Wazuh SIEM; conducted forensic investigation with Redline, Wireshark, and Volatility.
  - Evaluated defense readiness through log analysis, anomaly detection, and alert triage; documented IOC mapping and detection gaps.

Aug 2016 — Aug 2020

B.E in Computer Science & Engineering, Ramaiah Institute Of Technology

Bengaluru

Graduated with First-Class Distinction : CGPA - 8.23

Few Projects Undertaken :

- Toxic Comment Classification using Genetic Algorithm.
- Full-stack application for Malware Detection using Convolutional Neural Network.
- Anomaly Detection in Human Behavior using Video Surveillance.
- Low Cost Multi-path Routing Protocol by Adapting Opportunistic Routing in Wireless Sensor Network.

SKILLS

Languages: Python, JavaScript (Node.js), SQL, Bash

Frameworks: FastAPI, Flask, Rails, React, Redux

Cloud & Infra: AWS (EC2, Lambda, S3, Cognito, Route 53), Docker, Kubernetes

Security Tools: Burp Suite, OWASP ZAP, Nessus, AlienVault OTX

Databases: MySQL, PostgreSQL, MongoDB, Cassandra

Others: Git, Jira, Postman, Agile, Azure CI/CD

PUBLICATIONS

Dec 2019

Practical Significance of GA PartCC in Multi-Label Classification

This paper aims to create a prototype model that is capable of detecting various types of toxicity like neutral, toxic, severe toxic, threats, obscenity, insults and identity hate by using Genetic Algorithms (GA) over a Partial CC (PartCC) model, which is a modification over CC.

May 2019

IJRESM - Optimizing Compilation using Machine Learning Models.

In this article, we shed light upon the relationship between compiler performance (optimization) and machine learning, and the types of optimizations that could be made.

LANGUAGES

English — Highly proficient

Hindi — Very good command