Amal Antony Alex

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EDUCATION

Montfort School, Odisha, India   *July 2020 – July 2021*
Matriculation   *8.7 CGPA*

Dhenkanal Higher Secondary School, Odisha, India   *Jun 2021 – Jun 2023*
Higher Secondary   *6.1 CGPA*

Sri Sri University, Odisha, India   *July 2023 – Present*
Bachelor of Technology in Computer Science with specialization in Cyber Security   *7.9 CGPA*

EXPERIENCES

TCS iON, Tata Consultancy Services Limited   *Remote, Cuttack, Odisha, India*
Learning Intern   *December 2024 – February 2025*

- Designed and implemented a containerized Jenkins CI/CD pipeline using Docker and AWS services, streamlining automated build, test, and deployment workflows for cloud-based applications.
- Optimized pipeline efficiency by integrating Jenkins with AWS EC2, S3, and ECR, reducing build and deployment times by an estimated 25%.
- Automated infrastructure provisioning using Infrastructure-as-Code (IaC) principles with AWS CLI and custom scripts, ensuring reproducible and scalable environments.
- Enhanced pipeline reliability by incorporating automated testing, rollback strategies, and monitoring dashboards, improving fault tolerance and visibility into deployment health.
- Documented the end-to-end pipeline architecture, configurations, and workflows, enabling ease of handover, scalability, and maintenance for future development teams.

PROJECTS

Manufacturing Plant Network Design – Cisco Packet Tracer Simulation [GitHub]

- Engineered a scalable network architecture for a manufacturing plant, integrating Production, Quality Control, Logistics, and Administration zones to support seamless communication and optimized data flow.
- Designed and implemented VLAN segmentation to securely isolate IoT devices, SCADA systems, enterprise applications, and guest networks, enhancing both security and operational efficiency.
- Configured Layer 2 and Layer 3 network devices (switches, routers) with static routing, NAT, ACLs, and DHCP services to ensure reliable inter-zone communication and controlled external access via a DMZ.
- Integrated real-time monitoring solutions using SNMP and Syslog servers within the simulation to detect and respond to network anomalies without disrupting plant operations.
- Applied redundancy mechanisms (STP, router failover) to ensure high availability and fault tolerance, safeguarding critical OT systems from downtime and industrial cyber threats.
- Documented the complete network topology, IP addressing scheme, and security configurations, ensuring scalability, maintainability, and compliance with industrial best practices.

Password Manager [GitHub]

- Developed a secure, Java-based Password Manager application integrating AES encryption for password confidentiality and SHA-256 hashing for master password authentication, ensuring robust protection of sensitive credentials.
- Engineered persistent encrypted storage using local file handling/SQLite, enabling reliable cross-session password retention while maintaining data integrity and confidentiality.
- Designed and implemented a user-friendly GUI using JavaFX, transitioning from a console-based workflow to an intuitive interface for seamless credential management.
- Enabled full CRUD functionality for stored passwords and integrated a secure random password generator to support creation of strong, unpredictable credentials.
- Incorporated optional activity logging to track key user actions, enhancing auditability and aiding debugging during development.

TECHNICAL SKILLS | TOOLS | PLATFORMS

- **Languages/Libraries/Frameworks:** Python, SQL, Linux, Java, DSA, C
- **Concepts:** Network Fundamentals, Input/Output (stdio.h), Cybersecurity, Application Securtiy, Risk Management, Cybersecurity Frameworks, SNMP, SCADA, IoT, Network Security, Cloud Platforms (AWS)
- **Tools:** Git, CISCO Packet Tracer, Linux, VS Code, Google Sheets & Docs, MS Excel & Word, Power BI, Oracle

CERTIFICATES

- *McKinsey.org Forward Program*(McKinsey & Company)
- Business Understanding using Data Science (BCG X)
- Data Analytics using Excel and Tableau (Deloitte Australia)
- Empowering Business with Effective Insights using Power BI (TATA Group)
- AI for Entrepreneurship (INTEL Technologies India)
- Solution Architecture using AWS (Amazon Web Services)
- Cyber Job Simulation (Deloitte Australia)
- Dashboard Creation Using Python & Data Structure (Deloitte Australia)
- Practical Approach to Cyber Security (TCS iON)
- CCNA: Introduction to Networks (CISCO Networking Academy)
- *C Language Associate (CLA) - Programming Essentials in C (*CISCO Networking Academy)

ACHIEVEMENTS

SSUIMUN, Sri Sri University   **On-site, Cuttack, Odisha, India**
Organizing Committee Member   *October 2023 – October 2025*

- Progressed through leadership roles — **Secretary General**, previously **Deputy Secretary General** and **Deputy Director General** — demonstrating sustained commitment and increasing responsibility within the Secretariat.
- Spearheaded the planning and execution of international MUN conferences, leading logistics, operations, and a team of 70+ heads, directors and volunteers to deliver high-quality diplomatic simulations.
- Managed key relationships with university authorities, diplomats, sponsors, and academic institutions, securing partnerships and institutional support for event success.
- Coordinated event documentation, including participant lists, official reports, stakeholder correspondence, and post-event records to ensure smooth knowledge transfer and compliance.
- Designed and implemented strategic initiatives to enhance participant engagement, while mediating disputes, solving operational challenges, and ensuring procedural adherence throughout events.