OSAMA HAFEZ

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OBJECTIVE

- A highly motivated final-year Communication and Electronics Engineering student with hands-on experience in Networking, Information Technology IT, Cloud Computing (AWS), Machine Learning, and Programming (Python, C++, C). Proficient in designing and implementing cloud architectures through the AWS Solutions Architect framework, along with developing and deploying machine learning models using AWS services such as SageMaker. Additionally, I am skilled in electronics. Eager to contribute to dynamic organizations and grow professionally in cloud engineering, solutions architecture, and machine learning roles.

SKILLS

- **AWS Services:** EC2, S3, SageMaker, RDS, IAM, VPC, CloudFormation, EBS, CloudWatch
- **Machine Learning:** TensorFlow, Flask APIs, SageMaker, Image Tagging, Text Classification, Speech-to-Text
- **Networking (CCNA/CCNP):** TCP/IP, Routing (EIGRP, OSPF, BGP), MPLS
- **Programming:** Python, C++, C
- **Operating Systems:** Windows, Linux
- **Other:** Docker, API development

EDUCATION

BSc. in Communication and Electronics Engineering at Giza Engineering Institute (GEI), Giza, Egypt.

PROJECTS

Automated Image Tagging System using TensorFlow and Flask

- Built a machine learning model for automatic image tagging using the CIFAR-10 dataset.
- Integrated the model into a Flask API to allow easy image classification through an HTTP interface.
- Deployed the entire application within a Docker container for consistency across environments.
- Worked with AWS services and local environments to ensure the project can be replicated outside AWS as well.

Text Classification Model for Sentiment Analysis

- Developed a machine learning model for classifying text data, specifically for movie reviews, into positive and negative sentiments.
- Utilized TensorFlow and AWS SageMaker for model training, fine-tuning, and deployment.
- Created a Flask-based API to expose the model's predictions via REST endpoints, handling text input from users.
- Packaged the solution in Docker for easy distribution and deployment.

Speech-to-Text Conversion using AWS and Machine Learning

- Implemented an NLP project using Amazon Transcribe and machine learning models to convert speech into text.
- Integrated the system with AWS SageMaker for model building and training on large speech datasets.
- Enhanced the model with custom vocabulary and improved accuracy through hyperparameter tuning.
- Created an API endpoint using Flask to allow users to upload audio files and receive transcriptions.

Auto Scaling Architecture for AWS Solutions Architect

- Designed an auto-scaling cloud infrastructure using Amazon EC2 with load balancers to ensure high availability.
- Integrated Amazon RDS for database management and performed cross-region backups for disaster recovery.
- Utilized AWS KMS for securing sensitive data and applied security best practices using IAM roles and security groups.
- Deployed static content via Amazon CloudFront to ensure low-latency content delivery to global users.

Networking Labs

BGP and OSPF Configuration Lab

- Configured BGP (Border Gateway Protocol) and OSPF (Open Shortest Path First) in a complex multi-router environment.
- Implemented route filtering and redistribution between BGP and OSPF domains to control network paths.
- Troubleshot routing loops and optimized routing efficiency across multiple AS (Autonomous Systems).

Access Control Lists (ACL) and Security Lab

- Configured Standard and Extended ACLs to filter traffic based on IP addresses, protocols, and port numbers.
- Applied ACLs on network interfaces to secure the network by controlling ingress and egress traffic.
- Implemented best practices for network security using ACLs in combination with NAT (Network Address Translation).

IP Addressing and Subnetting Lab

- Designed and implemented an efficient IP addressing scheme using VLSM (Variable Length Subnet Masking) for different network segments.
- Configured subnet masks, IP ranges, and gateways for optimal network segmentation.
- Troubleshot subnetting issues and managed private/public IP address allocations using CIDR (Classless Inter-Domain Routing).

VPN and Secure Communication Lab

- Configured site-to-site VPNs to securely connect multiple networks across different geographical locations.
- Deployed IPsec and SSL VPNs for secure remote access and encrypted data transmission over the internet.
- Integrated VPN with firewall policies and encryption algorithms to ensure data confidentiality.

VLAN and Network Segmentation Lab

- Designed and configured VLANs for network segmentation, improving security and traffic management.
- Implemented Inter-VLAN routing using Layer 3 switches and applied STP (Spanning Tree Protocol) to prevent loops.

Routing Redistribution and Filtering Lab

- Configured route redistribution between different routing protocols such as BGP, OSPF, and EIGRP to enhance network flexibility.
- Implemented route filters using prefix lists, distribution lists, and route maps to control which routes are shared between protocols.
- Optimized network performance by filtering routes and preventing routing loops during redistribution between multiple protocols.

COURSES

- AWS Cloud Practitioner (MAY 2024 - JUN 2024) (DEPI)
- AWS Solutions Architect (JUN 2024 - SEP 2024) (DEPI)
- AWS Machine Learning Foundation (AUG 2024 - SEP 2024) (DEPI)
- AWS Machine Learning for Natural Language Processing (SEP 2024 - OCT 2024) (DEPI)
- Networking CCNA (JUN 2023 - OCT 2023) (Ahmed Nabil)
- Networking CCNP Routing (JUN 2024 - OCT 2024) (Ahmed Tawfik)
- Operating Systems (Windows Server MCSA) (DEC 2023 - FEB 2024) (Mohamed Zohdy)
- Programming (Python, C++, C)

LANGUAGES

English: Professional working proficiency

PORTFOLIO

My_Portfolio.GitHub.io