

MAHMOUD ZAKY FETOH

Phone: +201022381474

Email: zaky.fetoh@gmail.com

github.com/zaky-fetoh

linkedin.com/in/mahmoud-zaky-fetoh

Objective

I am a Software Engineer with 3 years of experience in software engineering, passionate about solving real-world problems and collaborating with great engineers from whom I can learn.

I have diverse experience across various disciplines, including backend development, MLOps, computer vision research, and DevOps.

Work Experience

Dec 2023 - Present

ML Cloud Consultant @ Bexprt, UK.

Involved at architecting and implementing MLOps and DevOps projects for MENA customers.

- Job Role:

- Architecting scalable training and serving pipelines for ML models.
- Managing AWS Cloud infrastructure across 7 AWS accounts for ML and Data teams.
- Architecting cloud-native solutions and developing Infrastructure as Code (IaC) for them.
- Designing solutions for large-scale data processing.
- Creating and executing large-scale migration plans.
- Designing, developing, and maintaining scalable and reliable CI/CD pipelines.
- Managing and maintaining compute clusters in AWS (ECS and EKS).
- Conducting rigorous comparisons of 3rd-party tools, selecting and integrating them into the infrastructure.
- Managing the monitoring solution and create tailored alerts.
- Continuously creating and updating documentation.

- Technologies:

Cloud Provider: AWS, Cloudflare.

IaC: Terraform, SAM, Serverless-Framework.

CI/CD: Github Actions, Atlantis, Terraform Cloud.

ETL: AWS Glue Crawler, Glue Database, Glue Job, S3, Firehose.

MLOps: SageMaker, bentoml, Prefect, MLflow, DVC.

Micro-frontend: Cloudfront, S3, Route53.

Container Orchestrators: ECS, EKS.

Monitoring: DataDog, NewRelic.

May 2023 - Dec 2023

DevOps Engineer @ n-go, KSA.

Administering the infrastructure for 1M user Application.

- Job Role:

- Administering and monitoring a microservices application with 1 million users running on a Kubernetes (Amazon EKS) cluster.
- Administering and maintaining Jenkins CI pipelines for performing Dockerization and image scanning.
- Developing Infrastructure as Code (IaC) using Terraform, Kustomize, and Helm, ensuring all follow the GitOps pattern.
- Developing custom and secure automation solutions to increase developer productivity.
- Administering and maintaining GitOps CD pipelines for Kubernetes using ArgoCD.
- Continuously enhancing the infrastructure and performing necessary migrations.
- Writing and creating Prometheus dashboards using PromQL for Kubernetes.
- Ensuring security by implementing security best practices.
- Administering RDS databases and MongoDB clusters.
- Administering Cloudflare DNS and other services.
- Administering Twingate ZTN solutions.

- Technologies:

Cloud Provider: AWS, OCI, Cloudflare.

Container Orchestrators: EKS, OKE.

CI/CD: Jenkins, GitHub actions, ArgoCD.

kubernetes Autoscaler: Cluster Autoscaler, karpenter.

	Monitoring: Prometheus, Grafana, Loki, ELK, Kiali, Jaeger. IaC: Terraform, Kustomize, Helm, Ansible. VPN & ZTN: Pritunl, Twingate. Service Mesh: Istio.
Jan 2023 - Apr 2023	MLOps Engineer @ Susoft, Norway. Building microservice application for Training and deploying machine and deep learning models for Sales forecasting. Performing customer segmentation to direct marketing campaigns. - <i>Job Role:</i> <ul style="list-style-type: none"> Creating a training and serving MLOps pipeline for multiple time series forecasting models, such as Prophet, Neural Prophet, and TFT. Developing custom data pipelines for extracting, loading, and transforming required data from MariaDB databases. Evaluating and monitoring model performance. Ensuring high availability of the serving models. - <i>Technologies:</i> Model Training: PyTorchForecasting, Pytorch, pandas, Prophet, NeuralProphet. Model Monitoring: Weight and biases, Prometheus, Grafana. Model Serving: torchScript, Docker, K8s. Model Registry: Minio. Asynchronous communication for issuing train request is done using RabbitMQ Gateway and load balancing services performed using NodeJS.
Jan 2021 - Jan 2022	Teaching & Research Assistant @ Menoufiya University, Egypt. <ul style="list-style-type: none"> Teaching courses on AI, deep learning, image processing, and computer vision. Teaching the CCNA curriculum, preparing exams, and evaluating students. Teaching the MCSA curriculum, preparing exams, and evaluating students. Teaching algorithms, data structure, Operating systems courses. Teaching backend programming using Node.js.

Education

2021 - 2023	Faculty of Computers and Information, Menoufia university, Egypt. M.Sc. in Computer Vision, specialized in deep learning research, graduated in 2023. <ul style="list-style-type: none"> Architected Convolutional Neural Networks (CNNs) for detecting COVID-19 in medical images. Built training pipelines, validated model accuracy, and performed model comparison. Monitored experiments, documented results, and writing papers.
2015 - 2019	Faculty of Computers and Information, Menoufia university, Egypt. B.Sc. Honors. I graduated with highest grade on my class with an Excellent honors GPA of 3.6. <ul style="list-style-type: none"> Hired as a Teaching Assistant at the same institute. My graduation project created an intrusion detection system for detecting various network attacks in software-defined networks using deep learning CIC-IDS2017 is used a training dataset Professional Certificates. AWS Certified Solutions Architect - Associate [Link] AWS Certified Machine Learning - Specialty [Link]

Frameworks & Technical Skills

Programming Languages:	Python, NodeJS, GoLang (learning)
HTTP Servers Frameworks:	ExpressJS, Flask.
Version Control Tools:	Git, Github, Bitbucket.
Data Science:	PyTorch, Pandas, statsmodels, Prophet, Numpy, OpenCV, Plotly, LLAMA 2, PaddleOCR.
MLOps:	SageMaker, Prefect, bentoml, Mlflow, Hydra, DVC.
Client API:	REST, GraphQL, gRPC, SocketIO.
Security Utilities:	Joi, Jsonwebtoken (JWT), OAuth 2.0.

Databases: MONGODB, MySQL, PostgreSQL, MariaDB.
Adminstration: CCNA, MCSA, RHCSA, Kubernetes,
Cloud Provider: AWS, OCI, Cloudflare.
Monitoring: Prometheus, Grafana, Loki, ELK, kiali, jaeger, DataDog, NewRelic.
Container Orchestrators: EKS, OKE, ECS, Docker-Compose.
Infrastrutcture as Code : Terraform, Kustomize, Helm, Ansible.
CI/CD: Atlantis, Terraform Cloud, Jenkins, Github Actions, ArgoCD.
VPN & ZTN: Pritunl, Twingate, Cloudflare Warp.
Message Broker: RabbitMQ, Kafka.
Documentation: Swagger, L^AT_EX.
Caching: Redis, MinIO.

Publications

- 2022 **Multiscale aware classification of COVID-19 from Chest X-Ray using a spatially weighted atrous spatial pyramid pooling CNN** [[Link](#)].
Mahmoud Z fetoh, Khalid M. Amin, Ahmed M. Hamad
 In this paper I propose, scale invariant CNN architecture for COVID-19 classification. Proposed model based on building a scale space in each layer using Atrous spatial pyramid pooling then selecting a correct space to operate at using spatial attention module.
- 2021 **COVID-19 Detection Based on Chest X-Ray Image Classification using Tailored CNN Model**, [[Link](#)]. **Mahmoud Z fetoh**, Khalid M. Amin, Ahmed M. Hamad
 In this paper I propose a very light-weight model as a consequence of using spatial separable kernel and depth-wise separable kernels for COVID-19 classification.
Published at: IJCI.