

50+ k8s nodes operated	2,000+ cameras on the platform	55h → 5h model training via PyTorch DDP	3d → 20m full platform setup	SAR 300K yearly savings (Expro)
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SUMMARY

Software engineer with 2+ years at an AI startup. I joined as an intern, converted to full time early and was promoted to SDE II in Apr 2026. I write the Python control-plane services behind **Baseer Builder**, our no-code computer-vision platform, and own its MLOps, DevOps and infrastructure. That covers Kubernetes across 50+ GPU nodes, CI/CD, secrets, networking, storage and observability, for deployments ranging from a 2,000-camera Saudi municipality to air-gapped government clusters.

TECHNICAL SKILLS

Languages	Python, Bash, TypeScript, SQL
Orchestration	Kubernetes (kubeadm, HA control plane, Jobs, StatefulSets, DaemonSets), Docker, containerd, Helm, Kubeflow Trainer
IaC & Delivery	Terraform, Ansible, Jenkins, Argo CD, GitHub Actions, Azure DevOps, GitLab CI, Harbor, HashiCorp Vault
Networking	NGINX, HAProxy, Keepalived (VIP), MetalLB, Ingress, VLANs, VPC design, WireGuard, Linux network namespaces
ML & Data	PyTorch DDP, MLflow, Kafka, MQTT, ClickHouse, PostgreSQL, Redis, InfluxDB, Qdrant, NFS/NAS
Cloud & Ops	AWS (EKS, EC2, VPC, ALB, API Gateway, RDS, S3, SQS, IAM), Alibaba (ECS, ACK, ACR), Cloudflare, Prometheus, Grafana

EXPERIENCE

Masterworks · Nabeh May 2024 – Present · Hyderabad
SDE II (Apr 2026 – now) · **Software Engineer** (Mar 2025 – Mar 2026) · **Engineering Intern** (May 2024 – Feb 2025)

Baseer Builder: no-code computer-vision platform product · MLOps & platform owner
The full CV lifecycle in one product: data, labelling, training, notebooks, real-time inference, camera and device fleets, and analytics.

- Architected the microservice platform** and own the core logic of the training, notebook, face registration, camera and device services, all written in Python.
- Model Training:** built an on-demand training service that runs as a Kubernetes Job for detection, classification and segmentation, with selectable architectures and weights. Added **PyTorch DDP** across pooled GPUs, which cut a production run from **55h to 5h** (~90%).
- Added pause, stop, resume and priority controls, live **MLflow** metrics, and two support services (logger and status) that stream progress over **Kafka**. Used Kubeflow Trainer so training persists across reboots.
- Jupyter Notebooks:** per-user StatefulSets, each on its own subdomain via Ingress + MetalLB, with code on NFS-backed NAS. Idle notebooks get a warning and are then shut down automatically to free GPUs.
- Face Registration:** an on-demand Kubernetes Job that supports multiple face models and stores embeddings in **Qdrant**.
- Camera Service:** an RTSP → HLS pipeline on MediaMTX with an API for the backend to add or remove cameras, tuned to convert thousands of streams in parallel.
- Device onboarding:** v1 used Ansible + Bash + MQTT to install Docker, NVIDIA drivers and the container toolkit, join the cluster and pre-pull images. **v2 (Deploy Manager)** replaced it to close security gaps. A persistent service now launches Ansible from Kubernetes Jobs to onboard single or bulk devices, **patch** to a pinned version, or **deboard** with full cleanup. It reports a 7-phase lifecycle to the backend over Kafka, with device health from kube-prometheus-stack.

EPM: Eastern Province Municipality, Saudi Arabia government · delivered on Baseer Builder

- Designed and operate the infrastructure for **200+ CV use cases on 2,000+ cameras**, sized for **50+ A100-class nodes**, as a dedicated environment alongside dev and prod.
- Moved every platform service (frontend, backend, Node-RED, agents, health service, databases, Redis) from Docker into Kubernetes. Full setup went from **3 days to 20 minutes**, with dynamic multi-GPU configuration.
- Migrated time-series storage from InfluxDB to **ClickHouse** and ran Redis and databases as StatefulSets on persistent storage.

Platform, DevOps & Infrastructure company-wide

- Kubernetes admin** for an on-prem HA cluster (HAProxy) of 50+ nodes across dev, prod and EPM.
- CI/CD:** two Jenkins pipelines detect changed services, lint, build and push images, and bump tags in an infra repo that **Argo CD** syncs to three environments. Also built GitHub Actions pipelines with SemVer and multi-environment deploys, with config in **Vault** as the single source of truth.
- Harbor registry** on NAS with backups, NGINX in front, and per-team accounts and quotas. Used by **8 teams**; saves about **\$1K/mo** and reduced image vulnerabilities.
- HA NGINX:** removed a single point of failure with Keepalived virtual IPs across machines and GitHub-synced config. Built a dual-network setup that fails over automatically when one network drops.
- Security & network:** key-only SSH, per-team restricted users, AD-backed machine login, every exposed service behind NGINX, an ISP-agnostic office network split into VLANs, and a DNS registrar move saving about **\$500/mo**.

- **Observability:** Prometheus + Grafana for every service in the cluster, per-camera uptime and device health, with alerts routed to the team. Multi-stage Docker images throughout; a compose-based setup took install time from 2h to 5min.

CLIENT DELIVERY

Saudi Ministry of Economy and Planning: AmplifAI (RAG) & Mudawin (meeting bot)

air-gapped on-prem Kubernetes

Built and deployed both production apps in a cluster with no internet egress, a private registry, internal DNS and SAML/ADFS, all operated over VPN.

- Dockerized both platforms and wrote their manifests for dev, staging and production, wiring each to databases, block storage and Ingress.
- **Unlocked horizontal scaling:** recording bots (one pod per Teams/Meet/Zoom/Webex meeting) were all pinned to **one node** by a shared ReadWriteOnce volume and a required podAffinity. I moved recording to node-local ephemeral storage and streamed finished multi-GB recordings back as a tar over the **k8s exec channel**, with no temp files. Bots now spread across **4 workers**, with right-sized requests and a one-env-var rollback.
- Fixed post-meeting artifact collection, which had been failing silently because it called `docker cp` from a pod with no Docker socket.
- **Prevented an outage:** the checked-in manifest would have deleted **22 live env vars**, including every Graph, Teams, Webex and SQL credential. I shipped a targeted strategic-merge patch instead and reconciled the repo to zero drift.

Expro: Saudi government expenditure entity

Alibaba ECS/ACR · Azure DevOps · Vault

- Designed a lean dev and production topology that saved **SAR 300K/year**. Built approval-gated, rollback-capable Azure DevOps pipelines across **4 branch-mapped environments** with PR checks that block merges.
- Made **Vault** the only source of config: every deploy re-renders env from Vault, staging gets its own secret tree under a read-only policy, token renewal is automated, and a refresh pipeline recreates containers without a rebuild.
- Hardened access with per-machine, key-only deploy accounts without sudo, and locked down world-writable deploy directories.
- Fixed a Docker bridge /16 that blackholed the office subnet, registry pull failures on build agents, deploy stages that ran after failed builds, an env file emptied when Vault was unreachable, and a volume orphaned by a compose rename.

Monsha'at: Saudi government entity

Alibaba ACK + ECS

- Deployed AI services on ECS and platform services on ACK, connected across **multiple VPCs**.
- Replicated dev, QA and pre-prod clusters and built GitLab CI/CD for the AI service.

Humain: storage migration

NVMe · ClickHouse

- Migrated staging /serve and ClickHouse data to a **3.5 TB NVMe** with UUID mounts and boot ordering.
- Verified checksums, kept rollback copies, and validated Docker, Kubernetes and ClickHouse after cutover.

Computer-vision PoCs (internship)

May 2024 – Feb 2025

- **Dubai Airport:** flight turnaround monitoring on live cameras across 3 gates. Built a Selenium + SMTP watchdog that detects expired streams, logs in again, refreshes the cookies, restarts the stream and emails the team.
- **Ajdan** (live crowd counts by men, women and children), **King Salman Military Base** (officer presence and unauthorized-access alerts), **Gold Chain** (multi-camera staff presence and footfall). For each, I trained the models and ran inference on live streams.

PROJECTS

Causeway : private-network camera access & recording

Python 3.12 · Next.js 16 · WebRTC · WireGuard · S3

- View and record cameras behind VPNs, jump hosts and SSH tunnels. Each customer runs in its own **Linux network namespace** (Fortinet, GlobalProtect, WireGuard), so a dropped tunnel can't leak traffic.
- 8-gate diagnostics from VPN to stream handshake. Shared WebRTC viewing with LL-HLS fallback. Crash-safe MPEG-TS segments assembled into MP4 and uploaded to S3, with gap metadata. **298 automated tests**.

kuiqctl : persistent kubeadm for roaming Linux hosts

Bash · Python · kubeadm · containerd · Calico · systemd

- Open-source CLI for a single-node cluster that stays Ready across Wi-Fi and DHCP changes, using a stable loopback identity, mDNS and a systemd address watcher. Preflight gates and lifecycle locks protect destructive operations; releases are versioned with CI.

CloudPad: on-demand dev sandboxes

K8s · FastAPI · React · AWS

- Chat to build a site and get a live URL plus a browser VS Code for it. Two pods share one persistent volume: one serves the code, the other writes it.

LensCopy: offline OCR image viewer

Python · GTK 3 · Tesseract

- Select regions of an image on Linux to copy their text. OCR runs off the UI thread, and there are installers for apt, dnf and pacman. No data leaves the machine.

AWS EKS document platform

EKS · RDS · S3 · SQS

- A private EKS platform on a multi-AZ VPC, fronted by API Gateway → VPC Link → internal ALB. Workers consume jobs from SQS, and Pod Identity replaces static keys.

Medium clone: codesphere.live

React · Hono · Cloudflare

- A blog with live notifications, Google + OTP auth and Postgres, deployed on Workers, Pages and R2 through GitHub Actions.

EDUCATION

B.E. Computer Science & Engineering, Osmania University, Hyderabad · GPA 8.4 / 10

2021 – 2025