

Chaudhary Asghar Ali

CHIEF TECHNOLOGY OFFICER · KAKUSHIN.IO LTD · CYPRUS & PAKISTAN

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PROFILE

Chief Technology Officer of a Cyprus-registered software company, accountable for architecture, delivery, infrastructure and security across a **39-project portfolio** — 15 internal products and 24 client engagements spanning web, native mobile and desktop — leading a distributed team of around twenty across two time zones.

Behind that, a decade of real-time communications engineering: WebRTC telemedicine, remote-control streaming protocols and cross-platform applications shipped from Islamabad, Kuala Lumpur and Silicon Valley startups. Hands-on by preference — I coordinate the largest regulated client engagement myself, run the code review and release gate, and build the internal tooling the engineering function runs on.

39 Projects under technical ownership 15 internal · 24 client	~20 People in the organisation 12 engineers, plus design and QA	45 Repositories migrated To company-owned source control	30+ Live production domains Across the estate
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EXPERIENCE

Chief Technology Officer

OCT 2023 – PRESENT

Kakushin.io LTD · Cyprus

- **Own technical direction for a 39-project portfolio** — 15 internal products and 24 client engagements across web, iOS/Android and Electron desktop — covering architecture, platform choice, hosting, data, third-party services and cost.
- **Lead a distributed engineering organisation of ~20** across two time zones (UTC+5 delivery, UTC+3 leadership and client contact), including 12 engineers plus dedicated design and QA functions; own staffing, capacity allocation and performance review.
- **Coordinate the company's largest regulated engagement** — dual native customer applications (SwiftUI and Kotlin/Compose) for a European national electricity utility, delivered under subcontract: 60+ screens over 8 backend services, custom EN/EL localisation, certificate pinning, dual-brand builds and a fortnightly two-platform release cadence. Drove third-party penetration-test remediation gating production acceptance, and acted as escalation owner across seven external engineering counterparties spanning auth, portal, payments, TLS and store distribution.
- **Re-engineered the engineering operating rhythm:** replaced the daily standup call with a twice-daily written scrum — start-of-day commitment, end-of-day delivery, six named fields — adopted by all thirteen team members on day one, making commitments reviewable against shipped commits for the first time.
- **Built the CTO Dashboard**, an Electron and SQLite application over Slack, GitHub and the in-house tracker measuring presence, hours against baseline, scrum compliance, code output and review latency; exposed the same database to LLM sessions as a read-only **MCP server**; and automated the pull-request pipeline — sweep, review, fix, merge, deploy, announce, release — on the Claude Agent SDK behind a code-level preflight that refuses draft PRs, protected branches and secret-shaped diffs.
- **Rolled out SprintForge**, an in-house Jira equivalent covering projects, sprints, issues, releases and boards, as the company's issue and release system of record across the portfolio.
- **Executed a full source-control and hosting ownership migration** — 45 repositories and their associated hosting projects moved to company-owned accounts — and ran departed-staff access audits with grant revocation across both GitHub organisations.

- **Consolidated the transactional email estate** onto a single provider (17 sending servers, ~10 sender domains), owning SPF/DKIM/DMARC posture and deliverability, and led the incident response and rebuild when the previous platform was compromised.
- **Own the shared infrastructure estate** — a server running 11+ production applications and the databases behind 18 projects — including capacity analysis, backup remediation, hostname and DNS inventory, and the migration path off single-point-of-failure hosting.
- **Run the code review and release gate personally** on client-facing merges, including production-freeze governance on payment-handling systems: escrow and payout flows, Stripe checkout, and OTP/2FA authentication paths.
- **Established portfolio-wide analytics and outbound infrastructure** — GA4 provisioned across 19 domains via a tag-manager rollout, plus a lead-generation pipeline with its own campaign runner, sequencing caps and reply/bounce handling.
- **Manage App Store and Play Console operations** across the mobile portfolio: submissions, review rejections, agreements and tax compliance, in-app purchase configuration, TestFlight distribution and target-API upgrades.

Lead Developer

SEP 2021 — OCT 2023

SwotKnot · Boulder, CO

Learning platform matching students to tutors by learning style using in-house machine-learning models. React front end, Node.js services.

Lead Developer & Software Architect

FEB 2020 — SEP 2021

RYZA · Palo Alto, CA

Real-time co-creation platform allowing several people to remote-control software from the browser, with no download and on-demand compute. Designed the whole architecture around WebRTC and a proprietary protocol for streaming application control over a data channel. React and Node.js with MongoDB.

Backend Developer

OCT 2018 — JAN 2020

PA0 · Boulder, CO

Node.js services, deployments and releases for a local-discovery media marketplace connecting people to independent places to eat, play and stay. Shipped on the App Store.

Cross-Platform App Developer

JUN 2017 — SEP 2018

Open Dynamics Sdn Bhd · Selangor, Malaysia

Cross-platform mobile applications, Angular front ends and Java back ends for a software house working largely with Malaysian government. Four applications shipped to Google Play: Qu Exchange, PAMs Hampshire, PAMs Manager and the Malaysia Medical Association app.

Research Associate — Full-Stack & Telemedicine Engineer

JUN 2016 — MAY 2017

CASE University · Islamabad

Built CHART, a WebRTC clinical research tool for detailed remote examination of patients, shipped on both app stores and used by clinicians and medical students. Lead telemedicine engineer on a wearable ECG device. PhoneGap and AngularJS on the front, Express on the back.

Full-Stack & Cross-Platform Developer

JAN 2015 — MAR 2016

CASE University · Islamabad · part-time, alongside the degree

On the team behind AL-BASR, telemedicine software that won a 2015 P@SHA ICT Award. Built its real-time chat and video conferencing over WebRTC, and the digital examination system with its Android application.

National electricity utility — customer apps

Regulated · under subcontract

Dual native iOS and Android customer applications for a European national electricity utility. 60+ screens over 8 backend services, dual-brand builds, fortnightly two-platform releases. Coordinator and escalation owner across seven external engineering counterparties; drove the penetration-test remediation gating production acceptance, and introduced a relay-proxy architecture that removed every client API key from the shipped binaries.

SwiftUI · Kotlin/Compose · Keycloak · Azure APIM · Oracle CC&B

Dementia Buddy

Healthcare

Consumer dementia-support app plus a care-provider portal carrying a twelve-module caregiver training curriculum, five distinct account types, and a BLE wearable module with proximity, panic alerts and GPS breadcrumbs. Access-hygiene review on a healthcare dataset, PII handling review, LLM cost attribution and endpoint-abuse analysis, and App Store submission through to approval.

Next.js · React Native · Firestore · MongoDB · OpenAI · [dementiabuddy.app](#)

BookMi

Multi-vendor marketplace

Booking and events marketplace spanning venues, packages and transport, with web, admin and React Native surfaces — the most service-dependent product in the portfolio. Production-freeze governance on main while go-live was withheld, the merge gate on daily client-feedback releases, escrow and payout change control, and OTP-path risk analysis. Established a 233-test Playwright suite against 148 documented use cases.

Node.js · React Native · MongoDB Atlas · Stripe · Twilio · [bookmihub.com](#)

AI Humanizer

Internal product · live revenue

AI-text detection and humanisation SaaS — the portfolio product carrying real subscription revenue. Full admin console covering users, subscriptions, credits, abuse and fraud, marketing, email and system health. Runs its own email service with self-managed DKIM and delivery tracking rather than depending on a third-party sender.

Vercel · Firestore · OpenAI · Stripe · custom SMTP · [aihumanizer.live](#)

BUILT PERSONALLY — INTERNAL ENGINEERING TOOLING

CTO Dashboard

Electron and SQLite desktop application joining Slack, GitHub and the in-house tracker: live presence, hours reconciled against what was claimed, scrum compliance and review analytics, a commit scan across the portfolio, an inbox of everything waiting on a reply, and cross-project release tracking.

Dashboard MCP server

The same database exposed to any LLM session as twelve read-only tools, each answer carrying a freshness block and the caveats a reader would otherwise get wrong.

Automated PR pipeline

Sweep → review → fix → merge → deploy → announce → release, driven by the Claude Agent SDK behind a code-level preflight that refuses draft PRs, protected branches, closed PRs and secret-shaped diffs, plus a per-PR shell gate classifying writes before reads.

SprintForge

An in-house Jira replacement — projects, sprints, issues, releases, boards — adopted company-wide as the system of record and exposed as an MCP server for LLM-driven workflows.

OPEN SOURCE

oajax.js — offline-first HTTP request handler

AUTHOR · 2016 · MIT

[github.com/chasgharali/oajax.js](#) · `bower install oajax.js --save`

A JavaScript library that handles HTTP and HTTPS requests whether the server is reachable or not. When it is not, the request is held in the browser's local web storage rather than failed, its state maintained there, and replayed against the server automatically the moment connectivity returns — GET and POST both survive the gap. Written for PhoneGap and Cordova applications, where local data handling was the hard problem; it is a drop-in replacement for a jQuery AJAX call, the same call shape with a different guarantee.

JavaScript · Web Storage · SQLite · jQuery · PhoneGap/Cordova

TECHNICAL STACK

LANGUAGES	TypeScript · JavaScript · Node.js · React · Next.js · React Native · Electron · Swift/SwiftUI · Kotlin/Compose · Python · Java · C/C++ · C#
REAL-TIME & MEDIA	WebRTC · SRTP/DTLS · TURN/coturn · FFmpeg · HLS · MediaMTX · socket programming
DATA	MongoDB (self-hosted and Atlas) · Firebase Firestore · PostgreSQL · Redis · SQLite · MySQL · SQL Server · Oracle
CLOUD & INFRA	Vercel · Cloudflare (DNS, Zaraz, Workers) · Hetzner · Render · Firebase · nginx/PM2 · client-managed VPS
MOBILE	App Store Connect · TestFlight · Google Play Console · Expo/EAS · in-app purchases and subscriptions
AI	OpenAI API · Anthropic Claude · Claude Agent SDK · Model Context Protocol server authoring · retrieval and prompt pipelines
PAYMENTS & COMMS	Stripe (checkout, subscriptions, escrow/payout) · Twilio · Postmark · Resend · Postfix + DKIM · Slack API
PRACTICE	Architecture review · release governance · Playwright · k6 · GitHub Actions · Azure DevOps · penetration-test remediation · Agile/Scrum
HARDWARE & IOT	BLE · Arduino / NodeMCU (ESP8266) · 8051 · MQTT · embedded systems · image processing

EDUCATION

BSc Computer Science

2012 — 2016

CASE University, Islamabad · affiliated with UET Taxila

MAJOR SUBJECTS Artificial Intelligence · Image Processing · Computer Graphics · Computer Communications & Networking · Network Security & Cryptography · Compiler Construction · Object-Oriented Programming · Data Structures · Software Engineering · Automata Theory · Web Engineering

RESEARCH INTERESTS

Fog & edge computing

My final-year work implemented a fog computing architecture in Node.js, including placement of the fog layer inside an SDN environment. The premise — push computation toward where the data is produced rather than hauling it to a distant cloud — is the same one that now governs how real-time and inference workloads get placed.

AI & cyber security

Two directions at once. AI as a defensive instrument — anomaly detection over traffic and behaviour. And AI as new attack surface: prompt injection, tool-call abuse, model and data exfiltration, and the supply-chain question of what a generated dependency actually contains.

Edge AI

Running inference next to the sensor rather than in a datacentre: model partitioning between device and edge node, the accuracy traded for latency and power, and the operational reality of shipping model updates to hardware you cannot SSH into.

Real-time communication

The oldest thread and still the deepest: WebRTC telemedicine from 2015, remote-control streaming protocols, and the transport problems — NAT traversal, relay economics, congestion control — that never stopped being interesting.

INDEPENDENT PROJECTS

HAJJ crowd management — indoor tracking and density estimation

NOVSYS · Saudi Arabia

BLE wristbands tracking a workforce indoors during HAJJ, with web and Android navigation apps, plus a separate crowd-density estimation system reading CCTV footage through image processing.

Cloud-based fingerprint attendance system

Cabin School System · Rawalpindi

Biometric attendance capture reporting into a hosted back end.

Clinic management system

Al-Dika Dental Clinic · Libya

Patient records, appointments and billing for a dental practice.

SMS result and attendance system

National Schools & Colleges · Islamabad

Results and attendance pushed to parents over SMS.

School management system

Cabin School System · Rawalpindi

Administration, enrolment and records for a private school group.

Forex trading bot

Independent · MQL4

Automated MetaTrader strategy execution, entry and exit rules driven by the programmed strategy.

Barcode fee-slip verification

CASE University · Islamabad

Verification of printed fee slips at the counter by barcode rather than by eye.

RFID gate-entry system

V3 Solution Pvt Ltd · Rawalpindi

Access control on a site gate, RFID readers into a central log.

ACADEMIC PROJECTS

A fog computing architecture, implemented in Node.js

Final-year project

Analysed the case for fog computing, designed the architecture, built a working implementation, and worked out the placement of the fog layer inside an SDN environment. The same question — how far from the data the computation should sit — is the one that governs real-time and inference placement now.

SEMESTER PROJECTS

SMPP server with web portal (PHP) · eLearning system (PHP) · Talking robot (JS, AI) · Stock trend analysis (data mining) · Colour-based object tracking (C#) · Remote oil-reservoir control (Arduino, Node.js) · Publisher/subscriber IoT stack (Node.js) · MQTT broker (Node.js) · Wireless ad-hoc chat room (Android) · FPS and car-racing games (Unity 3D) · Car tracking over GSM/GPS (8051) · WebRTC video conferencing · RC car over parallel port · Multi-server queue simulator · Critical-temperature SMS alert (8051) · Web-based home monitoring (Arduino) · POV display, 2D plotter and radar (Arduino)

RECOGNITION & LANGUAGES

P@SHA ICT Award — 2015

Team member on AL-BASR, the CASE University telemedicine platform that won a Pakistan Software Houses Association ICT Award.

IEEE Coding Race — 2nd place

FAST University

Second of twenty-five competing university teams.

Speed programming — 4th place

Iqra University

Fourth of fifty competing teams.

MALTA

CASE University

Built and ran an SMS-based group communication system used by more than 500 people across the university.

LANGUAGES English · Urdu · Punjabi

ALSO

Alongside the CTO role I run **Daniotech** (trading as Danio LLC), a WebRTC and real-time communication practice — building video calling into products, migrating teams off metered SDKs onto self-hosted LiveKit and mediasoup, and diagnosing the calls that fail for a subset of users and cannot be reproduced. Engineering notes and a live demo at daniotech.com; essays on AI-assisted development and the security of generated code at chasgharali.com/writing.