

SYSTEMS ATLAS / PORTFOLIO 2026

OMAIR AFZAL

Intelligence, *made operational.*

Senior software architect for agentic AI, distributed systems, proptech, fintech, and open-source infrastructure.

I design intelligent systems that survive
contact with reality.

13+

YEARS

REMOTE / GLOBAL

10M+

DAILY EVENTS

<https://omairafzal.com>

24

OSS ECOSYSTEMS



SENIOR SOFTWARE ARCHITECT

Omair Afzal

AGENTIC AI / DISTRIBUTED SYSTEMS / OPEN SOURCE

Architecture that moves from intent to consequence.

OPERATING THESIS

Senior Software Architect with 13+ years designing distributed systems, AI-native platforms, mobile-to-backend products, and developer tooling at scale. Currently leading engineering at ClickGUARD, shaping REWA's rent and rewards architecture, and contributing production fixes across Rust, TypeScript, and Python ecosystems.

Strategy matters when it changes latency, reliability, cost, or the way a team can work.

WORKING PRINCIPLES

- Evidence over demos
- Clear domain boundaries
- Durable workflows and observability

CORE COMPETENCIES

AI & Intelligent Systems

RAG, vector search, multi-agent orchestration, LLM integration, cognitive architecture, knowledge graphs.

Systems Architecture

Distributed systems, mobile-to-backend platforms, event-driven design, CQRS, microservices, domain-driven design.

Open Source & Tooling

Prisma, NestJS, Rust infrastructure, Symfony, developer experience, technical documentation, community review.

13+	YEARS SHAPING SYSTEMS	10M+	DAILY TRANSACTIONS	63	PUBLIC PULL REQUESTS	24	OSS ECOSYSTEMS
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Autonomous fraud defence at production scale.

HEAD OF ENGINEERING / MAR 2021 - PRESENT

Leading engineering for an ad-fraud protection platform processing millions of daily transactions. Own technical strategy across agentic threat detection, event-driven services, cloud efficiency, and distributed-team execution.

10M+

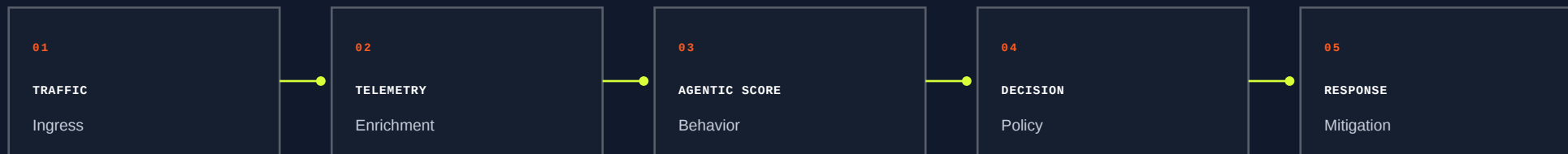
DAILY TRANSACTIONS

40%

FEWER FALSE POSITIVES

60%

LOWER CLOUD COST



ARCHITECTURE MOVES

- Separate ingestion, enrichment, scoring, and mitigation concerns.
- Make multi-step response observable, resumable, and auditable.
- Combine behavioral evidence with vector-similarity signals.

OPERATIONAL CONSEQUENCE

- Sub-second decision latency at production volume.
- Lower false-positive pressure for customers and operations teams.
- Cloud capacity follows workload shape without sacrificing resilience.

CLICKGUARD.COM / LIVE PLATFORM

AGENTIC AI / PYTHON / KUBERNETES / VECTOR DATABASES / TYPESCRIPT

One platform from tenant onboarding to rent settlement.

SENIOR SOLUTION ARCHITECT / AUG 2025 - PRESENT

MOBILE / BACKEND / ARCHITECTURE

Leading solution architecture across REWA's tenant mobile app and backend platform for digital rent payments and loyalty rewards in the UAE.

rewa.rent

01 Tenant app FLUTTER Onboarding, rent, rewards	02 Core platform NESTJS Contracts, workflows, data	03 Landlord portal NEXT.JS Leases, collections, insight	04 Operations SYMPONY Exceptions, support, controls
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DOMAIN BOUNDARIES

TENANTS / LANDLORDS / LEASES / PAYMENTS / REWARDS / IDENTITY / MESSAGING

ARCHITECTURE RESPONSIBILITIES

- Unified Flutter, NestJS, Next.js, and Symfony surfaces through shared contracts.
- Designed resumable and idempotent payment, onboarding, lease, and identity journeys.
- Defined domain boundaries for tenants, landlords, leases, payments, rewards, and messaging.

PLATFORM OUTCOMES

- One coherent service layer across tenant, landlord, and operations experiences.
- Durable exception lifecycles for collection, reminders, and reconciliation.
- Shared schema authority across modular services and background workers.

AI and health systems with people in the loop.

FAMILY AI

Waffle.Coach

JAN 2024 - PRESENT

Architecting an AI parenting assistant with retrieval, semantic memory, multimodal interaction, and privacy-first data systems.

SELECTED OUTCOMES

- Built context-aware retrieval with sub-100ms latency across 100M+ vectors.
- Designed developmental-state tracking for personalized child-development insights.
- Created a hybrid edge-cloud architecture for responsive mobile experiences.

GENAI / MILVUS / ARANGODB / PYTHON / NESTJS / LLMS

HEALTHTECH

Coredirection Health & Fitness

2022 - PRESENT

Designing event-driven architecture for health telemetry, real-time analytics, and scalable coaching experiences.

SELECTED OUTCOMES

- Cut deployment cycles by 75% through event-driven microservices.
- Reduced read latency by 80% with CQRS and purpose-built read models.
- Delivered a leaderboard capable of millions of updates per minute.

EVENT SOURCING / KAFKA / CQRS / NESTJS / PYTHON

FOUNDATIONAL EXPERIENCE / ALAYACARE / 2015 - 2021

Healthcare scheduling and service architecture

90% FASTER SCHEDULING / GRAPHQL FEDERATION / 20+ SERVICES

Four systems, each shaped by an operating constraint.

01 / AI / KNOWLEDGE

Autonomous Enterprise Knowledge Graph

Self-organizing enterprise knowledge with research agents, hybrid vector-graph retrieval, consistency checks, and gap detection.

[Self-healing consistency](#) / [Autonomous research](#) / [Multi-hop retrieval](#)

[OpenClaw](#) / [LangChain](#) / [Neo4j](#) / [Milvus](#) / [Python](#)

02 / AGENT RUNTIME

OpenClaw Execution Engine

Reliable execution across modern web applications through semantic DOM understanding, authentication handling, and browser orchestration.

[Self-healing selectors](#) / [Rust async runtime](#) / [Action middleware](#)

[Rust](#) / [TypeScript](#) / [CDP](#) / [Tokio](#)

03 / SEARCH INFRASTRUCTURE

Distributed Vector Search Platform

Billion-scale embedding search with distributed sharding, custom HNSW strategies, failover, and per-collection observability.

[Shard rebalancing](#) / [Real-time insertion](#) / [Multimodal embeddings](#)

[Milvus](#) / [Go](#) / [Kubernetes](#) / [gRPC](#) / [Prometheus](#)

04 / THREAT INTELLIGENCE

Autonomous Fraud Prevention System

Real-time ad-fraud analysis using autonomous validation agents, behavioral models, and adaptive rule generation.

[100K+ events per second](#) / [Behavioral classification](#) / [Adaptive rules](#)

[Python](#) / [TensorFlow](#) / [ClickHouse](#) / [Redis](#) / [Docker](#)

Public engineering is evidence, not decoration.

63

PUBLIC PULL REQUESTS

13

VERIFIED MERGES

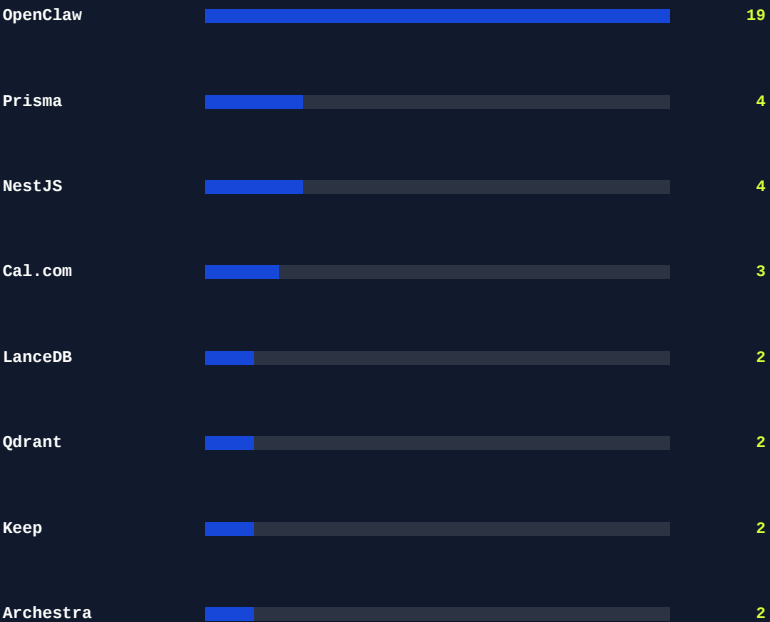
56

PUBLIC REPOSITORIES

2017

BUILDING IN PUBLIC SINCE

CONTRIBUTION DENSITY



SELECTED VERIFIED MERGES

PRISMA ORM #29177	>
Cross-realm safe Uint8Array checks in the Client Engine Runtime	
OPENCRAW #24876	>
Strip null bytes from workspace paths that caused ENOTDIR	
OPENCRAW #12942	>
Preserve native OpenRouter model prefixes	
LANCEDB #3030	>
Handle empty hybrid-search result sets gracefully	
SCREENPIPE #2241	>
Align the OpenAPI specification with the live API	
PRISMA ORM #29158	>
Respect curly-brace escaping in MSSQL connection strings	

Twenty-four ecosystems, clearly indexed.

Databases, frameworks, agent runtimes, creative tools, developer platforms, security infrastructure, and documentation. Every item maps to a public repository.

01	OpenClaw AGENT RUNTIME Routing, auth, channel, and CLI reliability	09	Documenso DOCUMENT WORKFLOW Public-profile layout repair	17	Foundry ETHEREUM TOOLING Simulation log restoration
02	Prisma ORM DATABASE TOOLKIT Driver edge cases and runtime safety	10	tscircuit HARDWARE TOOLING Valid STEP solid generation	18	Screenpipe AI CAPTURE OpenAPI specification overhaul
03	NestJS APPLICATION FRAMEWORK Official sample test coverage	11	Nuclei SECURITY SCANNER CI spelling quality workflow	19	uv PYTHON TOOLING Configuration diagnostics
04	Keep ALERT MANAGEMENT Nagios provider and real-time webhooks	12	Cap SCREEN RECORDING Rust deeplinks and Raycast extension	20	Ruff PYTHON TOOLING Jira-style TODO references
05	Archestra MCP PLATFORM Groq and DeepSeek providers	13	Firecrawl WEB DATA MCP setup guides for 30+ environments	21	Meilisearch SEARCH ENGINE Empty-index search handling
06	ComfyUI CREATIVE AI Widget event propagation fix	14	DN Institute MARKET INTELLIGENCE ML prompts and similarity-search tests	22	Tauri DESKTOP FRAMEWORK Rust asset URL parity
07	Cal.com SCHEDULING Booking and routing features	15	Qdrant VECTOR DATABASE Per-collection Prometheus metrics	23	Typst TYPESETTING Spread type inference
08	Coolify CLOUD PLATFORM SurrealDB service templates	16	LanceDB VECTOR DATABASE Hybrid-search reliability and refactor	24	Symfony PHP FRAMEWORK HTTP Kernel and Console

A career spent making complexity tractable.

01	CLICKGUARD Head of Engineering MAR 2021 - PRESENT	Leading engineering for an ad-fraud protection platform processing millions of daily transactions. Own technical strategy across agentic threat detection, event-driven services, cloud efficiency, and distributed-team execution.	Built autonomous fraud detection for 10M+ daily transactions with sub-second latency.
02	REWA Senior Solution Architect AUG 2025 - PRESENT	Leading solution architecture across REWA's tenant mobile app and backend platform for digital rent payments and loyalty rewards in the UAE.	Unified Flutter, NestJS, Next.js, and Symfony surfaces through shared contracts.
03	WAFFLE.COACH Senior Software Architect - Consultant JAN 2024 - PRESENT	Architecting an AI parenting assistant with retrieval, semantic memory, multimodal interaction, and privacy-first data systems.	Built context-aware retrieval with sub-100ms latency across 100M+ vectors.
04	COREDIRECTION HEALTH & FITNESS Technical Architect - Consultant 2022 - PRESENT	Designing event-driven architecture for health telemetry, real-time analytics, and scalable coaching experiences.	Cut deployment cycles by 75% through event-driven microservices.
05	ALAYACARE Senior Software Engineer JAN 2015 - JAN 2021	Helped move enterprise healthcare infrastructure from a PHP monolith to Python and NestJS services with GraphQL federation.	Reduced scheduling conflict calculation time by 90%.

Bring me the problem that refuses to stay simple.

CAPABILITY INDEX

01

Agentic AI & Automation

OpenClaw / RAG / LLM integration
Vector search / Knowledge graphs

02

Core Engineering

TypeScript / Python / Rust / Node.js
Go / PHP / GraphQL

03

Architecture & Infrastructure

Distributed systems / Event sourcing
CQRS / Kubernetes / Terraform / AWS

04

Data & Frameworks

PostgreSQL / Neo4j / Milvus / Qdrant
NestJS / Prisma / Symfony / Next.js



NEXT COORDINATES

Architecture reviews
Agentic systems
Platform strategy
Technical direction



LIVE SYSTEMS ATLAS

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