

Aizu Ikmal Ahmad

Technology leader and system architect. Media platforms, AI media intelligence, event operations software and connected-device systems.

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PROFILE

Technology architect and engineering leader with **over 18 years** designing high-availability, high-performance, cloud-native platforms. Proven at national scale, with systems serving **more than a million concurrent users** in real time. Today, director of Aisoft Technology, delivering digital newsroom platforms, AI-driven media asset intelligence, live event operations software and IoT telematics for publishers, government agencies and enterprise clients across Malaysia.

SELECTED PROJECTS

AISOFT DELIVERY PORTFOLIO

01

CLIENT
Media Selangor Sdn. Bhd.

YEAR
2024 to present

ROLE
Platform owner & lead engineer

Media Selangor News Platform

End-to-end ownership of a state media organisation's news network - **content management, front end, infrastructure and ongoing support** - carried as one engagement rather than handed between vendors.

- Migrated the newsroom **off WordPress onto Aircraft CMS**, doubling front-end performance and measurably improving editorial throughput.
- Multilingual publishing across **Malay, English, Chinese and Tamil** desks, over an article archive of **330,000+ stories reaching back to 2012**.
- Self-hosted infrastructure on **client-owned virtualisation** - MongoDB replica set, Nginx, containerised services and a media CDN - keeping the platform and its data under the organisation's control.
- Replaced a third-party hosted search service with a **self-hosted Chinese-language search engine** with proper word segmentation, after the incumbent silently served a nine-month-stale index while still answering HTTP 200. The replacement is health-monitored so staleness fails loudly.
- Supporting products on the same platform: an **ad manager**, an internal **data console**, and automated multi-language editorial performance reporting for each desk.
- Ongoing operational support and incident response, not a hand-over-and-leave delivery.

STACK Next.js · Node.js · MongoDB · Nginx · Docker · Proxmox · Cloudflare Workers · Manticore

02

CLIENT
Media Selangor Sdn. Bhd.

YEAR
2026

ROLE
Architect & lead engineer

SMAP - AI Digital Asset Management

A digital asset management platform for a state media organisation's video and photo archive, with the entire AI pipeline running on **client-owned on-premise GPU hardware**, so no source media ever leaves the organisation.

- Indexed a **1.5 million-file production NAS** into a processed library of **95,000+ videos (1,900+ hours of footage)** and **69,000+ images**, with scheduled rescans, checksum de-duplication and missing-file detection.
- **Bahasa Malaysia speech-to-text** on GPU with faster-whisper large-v3 (CTranslate2, int8_float16 on CUDA), then a **Gemini API** correction pass over the raw transcript, producing searchable transcripts and subtitle tracks.

- **Hybrid search** combining typo-tolerant full-text with semantic vector search over multilingual content, so an editor finds footage by describing it, not by remembering the filename.
- **Face detection, clustering and named-person recognition** across the photo archive, letting the newsroom pull every frame of a given person on request.
- Automated ingest pipeline: technical probe, multi-frame thumbnails, mobile-friendly video proxies, and AI-generated summaries, tags and entity extraction.
- Designed to run on a single client-owned GPU node with no external queue or vector-database service, keeping recurring cost to an AI API budget alone.

STACK Next.js · Python · PostgreSQL + pgvector · Meilisearch · faster-whisper · Gemini · InsightFace · ffmpeg · Proxmox / NVIDIA CUDA

03

CLIENT
Malaysiakini, Mkini
Dotcom Sdn. Bhd.

YEAR
2024 to present

ROLE
Engagement lead &
engineer

Malaysiakini.com Platform

CMS and infrastructure management for Malaysia's pioneering independent news outlet, serving **more than 10 million monthly readers**.

- Ongoing management of the **AWS services** behind the public site, the subscription platform and the newswire feed services to other outlets.
- Support for the **membership and subscription platform**, including third-party sign-in and identity integrations.
- Content delivery, caching and deployment pipelines on a platform whose traffic peaks are national events, not marketing campaigns.
- The engagement continues a platform I previously led as **Chief Technology Officer**, so operational knowledge transferred with no ramp-up.

STACK Next.js · Node.js · GraphQL · AWS (EC2, S3, CloudFront, Lambda) · Cloudflare

04

CLIENT
Aisoft product, in
production at
Malaysiakini, Media
Selangor and FG Media

YEAR
2024 to present

ROLE
Product owner & architect

Aircraft CMS - Headless Publishing Platform

The in-house, API-first content management system underneath those platforms - built for newsrooms, multi-tenant from the ground up.

- Multi-tenant across **five active media properties**, with multilingual publishing in Malay, English, Chinese and Tamil.
- **API-first by design**, so one content store serves the public web, mobile apps and third-party newswire feeds without duplication.
- Editorial workflow modelled on how a newsroom actually runs, from desk assignment through to scheduled publication.
- The platform Aisoft deploys for every new publisher engagement, rather than rebuilding per client.

STACK Next.js · Node.js · MongoDB Atlas · AWS · Nginx · Docker

05

CLIENT
AP Digital Media

YEAR
2026

ROLE
Product owner & engineer

Guest & Event Management System

A multi-event guest registration, accreditation and attendance platform that replaced clipboard guest lists at corporate and brand events. **Live on event day**, with real guests walking through the door.

- System ran live across **multi-day corporate conferences and a nationwide brand campaign**, with a further conference guest portal in development.
- **Three check-in surfaces** - a mobile-first secretariat app secured by event code and personal staff PIN, a public QR self check-in needing no login, and a live attendance dashboard broken down by guest category.

STACK Next.js · Cloudflare Workers · D1 · R2 · SQLite · QR accreditation

06

CLIENT

Pusat Pungutan Zakat
MAIWP, via Hartasuci
Sdn. Bhd.

YEAR

2025 to 2026

ROLE

Engineer & project
manager

PPZ MAIWP - SPSM - Internal Systems Modernisation

Modernisation of internal operational and payroll-reporting modules for the federal territories' zakat collection agency, delivered onto an existing enterprise estate rather than replacing it.

- Delivered the **Salary Report (Laporan Gaji) module** against a fixed-scope contract.
- Built with **Laravel, Filament and Livewire over the client's existing Oracle database** - modern interfaces on top of the system of record, with no risky data migration.
- A **recurring engagement** across multiple modules, with scope, quotation and acceptance managed end to end.

STACK Laravel · Filament · Livewire · PHP · Oracle

07

CLIENT

Independent R&D, running
a private three-vehicle
fleet

YEAR

2026

ROLE

Sole engineer, hardware
to interface

GPS Fleet Tracking & Telematics

A complete vehicle tracking system built from the device protocol upward, replacing a commercial subscription platform. **Hardware, ingest, mapping and alerting, all self-hosted.**

- Configured **GT06-protocol GPS hardware units off a third-party tracking service.**
- Wrote a **TCP capture proxy sitting in front of a Traccar position server**, giving full packet-level visibility for protocol debugging.
- Custom operator interface on **OpenStreetMap**: live positions, per-device naming and photo markers, motion state and GPS-chip sleep state, built mobile-first for one-handed use.
- **Geofencing engine** with per-device zones and arrive / leave / both rules, two-consecutive-confirmation debounce and cooldown to suppress false alarms, alerting by email and mobile push.
- **Two-way device management** - a remote command console with a confirmation flow, plus scheduled battery telemetry that reconstructs a voltage curve from sparse device heartbeats.

STACK Node.js · Express · Traccar · Leaflet / OpenStreetMap · GT06 protocol · Proxmox LXC · Cloudflare Zero Trust

PROFESSIONAL EXPERIENCE

Aisoft Technology Sdn. Bhd. Kuala Lumpur · Media platform & systems house

Aisoft Technology is a niche market enabler for media publishers entering high-availability, high-performance news publishing, and has since extended into AI media intelligence, event operations software and enterprise systems modernisation. The practice combines deep AWS and edge-platform expertise with modern JavaScript to deliver scalable, secure and cost-optimised systems.

Director, Project Manager & Engineer

January 2024 - Present

- Oversee end-to-end delivery of enterprise-grade platforms, defining technical standards and operational workflows across every client engagement.
- Lead architecture and execution for backend and frontend systems using Next.js, Node.js, Python, MongoDB, PostgreSQL, Nginx, Linux and Docker, on AWS and Cloudflare.
- Develop and maintain **Aircraft CMS**, the in-house content management system powering API-first publishing across multiple clients.
- Architect and optimise cloud infrastructure on AWS (EC2, S3, CloudFront, SES, Lambda, VPC) and Cloudflare (Workers, D1, R2, Zero Trust), achieving cost-efficient deployments and 99.9% uptime.
- Extended the practice beyond publishing into **on-premise AI media intelligence, live event operations software and connected-device telematics** - the work detailed under Selected Projects.
- Establish and mentor a team of specialised JavaScript engineers and UI/UX designers, fostering technical excellence, performance discipline and continuous learning.

Farmbyte JCorp subsidiary · Kuala Lumpur · Agrifood aggregator

Farmbyte is a digital-driven food aggregator leading the transformation of Malaysia's agrofood sector.

API & Web Tech Lead, Full Stack Engineer, DevOps

June 2024 - June 2025

- Defined and established the core web architecture, implementing the React codebase, coding standards and deployment structure for an internal crop management control panel.
- Led the Product & Pricing API team building internal APIs for crop pricing (Pricing Engine) and the product master list (PML), for high performance and data integrity.
- Worked closely with product managers and mobile developers to align feature requirements, optimise integration flow and keep platforms consistent.
- Ran regular code reviews and technical audits upholding code quality, security and engineering best practice.
- Spearheaded DevOps initiatives improving CI/CD efficiency, monitoring and scalability across environments.
- Introduced team-wide documentation and version control improvements, improving developer onboarding and cross-department collaboration.

Astro GoShop Astro GS Shop · Kuala Lumpur · Online & TV shopping

Astro GoShop is an online and offline shopping platform with a large consumer base originating from the live TV shopping channel on Astro, Malaysia's major cable provider. The role meant managing remote developers across multiple time zones and language backgrounds, while keeping the developer and designer workflow in harmony.

Tech Lead

March 2023 - October 2023

- Defined the technical direction and strategy for the Astro GoShop website and mobile app, including technology stack, architecture, scalability, security and performance across a hybrid AWS and on-premise estate.
- Led a team of software engineers, setting goals, delegating and mentoring to ensure delivery, coordinated through Jira and Slack.
- Bridged engineers, designers and product stakeholders so business objectives and technical delivery stayed aligned.
- Reviewed code written by team members, holding the line on coding standards and best practice.
- Worked with Astro Group DevOps, cyber security and infrastructure teams to keep implementation compliant and secure.

NOTABLE

- Increased SEO visibility and performance by **more than 110% within three months** by refactoring the pre-render mechanism of the web presentation layer.
- Optimised AWS resource cost and usage across multiple products, mainly EC2 and DynamoDB.
- Cut the product development sprint cycle from **seven weeks to four**, a 50% faster release cadence and a measurable lift in business-unit satisfaction.

Malaysiakini Mkini Dotcom Sdn. Bhd. · Kuala Lumpur · Online news

Malaysiakini has been the pioneer of independent online news in Malaysia since 1999. Fully self-funded, its mission centres on fast, accurate, independent journalism serving more than 10 million monthly readers. Across **13 years** I came to know a media organisation's requirements, trends and demands inside out, bridging engineering with editorial, subscription and sales. The team and I were featured in an **AWS case study** for cutting costs by 50% while serving more than a million concurrent readers.

Chief Technology Officer

2019 - March 2023

- Set the overall technology direction and strategy for Malaysiakini, and led delivery of the solutions supporting the organisation's goals.
- Ran the technology department including hiring, training and performance management, and managed budgets and resources - notably a **50% saving on the AWS platform**.
- Worked with the CEO, COO and Editor-in-Chief to align technology strategy with business objectives, and reported progress to shareholders and senior management.
- Ensured the security and reliability of the malaysiakini.com platform and its newswire feed services to other outlets.
- Defined processes and standards for platform development and deployment, and managed technology risk with backup and contingency planning.
- Acted as a thought leader and spokesperson for the organisation's technology initiatives.

NOTABLE

- Team lead for the **2022 Malaysia 15th General Election** high-performance live results page on AWS (live.malaysiakini.com).
- Planned and guided infrastructure serving 20,000 concurrent readers daily via GraphQL API to web, mobile app and newswire feed consumers.
- Head of engineering and project manager for the newsroom software suite: **Newscraft CMS** (headless CMS) and **Newsmetrics** (real-time analytics dashboard).
- Set the standard stack for the engineering team - Next.js, React, Node.js and AWS - standardising all web products and internal tools onto JavaScript, migrating every server vendor onto AWS, and moving critical repositories onto AWS CodeCommit with CodeBuild and CodePipeline.

Engineering Manager

2017 - 2019

- Mentored and coached the team, and developed the strategies and processes supporting its growth.
- Participated in hiring to recruit engineering talent, and ran performance evaluations and regular feedback.
- Identified and resolved technical, subscription and operational challenges, and oversaw the tooling and process behind code review and continuous integration and delivery.
- Planned the commercialisation of Newscraft CMS and the Newsmetrics analytics dashboard.

NOTABLE

- Team lead for the **2018 Malaysia 14th General Election** live page, which drew **more than a million concurrent visitors** on AWS.
- Led the team and infrastructure behind the hybrid Android and iOS mobile app.
- Led technical support, managing a fibre-optic network with multiple VLANs serving workstations, CCTV and VOIP phone systems.

Senior Full Stack Engineer

2012 - 2017

- Designed and built scalable, maintainable software across a range of technologies, and led technical design and architecture discussions within the team.
- Mentored junior engineers, reviewed code and troubleshoot complex technical issues.
- Worked with product managers, designers and stakeholders to translate business requirements into technical solutions, and acted as technical liaison to other departments.

NOTABLE

- Solo-developed Malaysiakini's sister sites, and the Malaysiakini mobile web.
- Ran R&D on the technology stack, including early adoption of Node.js.
- Advocated SaaS cloud to the team and shareholders, taking production onto AWS and Cloudflare.
- Notable applications: **Undi.info**, an election database, and **mk.my**, a URL shortener.

Open Source Technologist

2009 - 2012

- Advocated and grew the organisation's involvement in the open source ecosystem, specialising in PHP and MySQL, and WordPress plugin and theme development.
- Designed and built WordPress news websites with custom front ends delivering high availability and performance.

Multimedia & DigitalWorks Sdn. Bhd. Kuala Lumpur · Web development firm

Web Programmer

2007 - 2009

- Designed and built web platforms on the LAMP stack, working with senior team members to understand and implement requirements.
- Troubleshoot and debugged technical issues across a range of web projects, writing clean and well-documented code.
- Part of the **Malaysian Parliament** online presence team, building the database and profile pages for members of parliament.

TECHNICAL SKILLS

ARCHITECTURE	System architecture, high-performance and high-availability web, edge and serverless delivery, API-first platform design
LANGUAGES	JavaScript, TypeScript, Python, PHP, SQL, HTML, CSS, MQL4 (MetaTrader)
FRAMEWORKS	Node.js, Next.js and React, Svelte, Tailwind CSS, Laravel with Filament and Livewire, FastAPI, Express, Leaflet
DATA	MongoDB, PostgreSQL with pgvector, MySQL, Oracle, Redis, SQLite, Cloudflare D1, Meilisearch
CLOUD & INFRA	AWS (EC2, S3, CloudFront, Lambda, SES, VPC, DynamoDB), Cloudflare (Workers, D1, R2, Zero Trust), Docker, Proxmox, Nginx, Linux (Debian-based), macOS
AI & MEDIA	Speech-to-text (faster-whisper), Gemini API, face recognition (InsightFace), vector and semantic search, ffmpeg media pipelines, GPU inference on CUDA
IOT & TELEMATICS	GT06 and GPS device protocols, Traccar, OpenStreetMap, geofencing, remote device management

REFEREES

Premesh Chandran

Executive Director, Open Society Foundations. CEO and shareholder, Malaysiakini.

Wan Rahafiz Wan Abdul Rahim

Engineering Manager, Farmbyte Sdn. Bhd.

Manohar Kanagasingam

General Manager, Malaysiakini.

Contact details for referees available on request.