

Haikal Hilmi - Software Engineer

Software Engineer building production-ready full-stack products, scalable APIs, microservices, integrations, and AI-powered applications. Experienced with high-throughput backend systems, client products, and award-winning platforms.

This document is optimized for search, retrieval-augmented generation (RAG), and AI knowledge bases. It is generated from the live portfolio data source.

Contact and profiles

- Website: <https://haikalhilmi.my.id>
- LinkedIn: <https://www.linkedin.com/in/haikalhilmi/>
- Upwork: <https://www.upwork.com/freelancers/~01ff216c8a0f8a68a1>
- Project inquiry: <https://tally.so/r/81VNPz>

Core capabilities

- Full-stack products: responsive interfaces, APIs, databases, authentication, and production deployment.
- Backend engineering: microservices, event-driven systems, high-throughput services, and third-party integrations.
- Product engineering: architecture decisions, rapid delivery, maintainability, security, and observability.
- Applied AI: LLM assistants, automation, recommendation systems, and AI-enabled SaaS products.

Professional experience

ByteDance

- Role: Backend Engineer Intern
- Period: Feb 2025 - Jun 2025
- Location: Yogyakarta, ID
- Impact: Built a microservice handling 100,000+ requests/second.
- Context: Contributed to Tokopedia x TikTok-Shop system integrations.
- Technologies: Go, gRPC, RocketMQ, NSQ, Bytecloud
- Highlights:
 - Contributed to Tokopedia x TikTok-Shop system integrations.
 - Added Lark support to the internal dev kit, cutting log spam ~60%.

Engineering Research & Innovation Center, FT UGM

- Role: Full Stack Software Engineer
- Period: Jul 2025 - Jan 2026
- Location: Yogyakarta, ID
- Impact: Ran UGM Career Summit for 2,800+ concurrent users with zero downtime.
- Technologies: Next.js, React, TypeScript, Supabase
- Highlights:
 - Engineered a white-label ticketing architecture with QR validation under 2 seconds.
 - Built an automated document-generation pipeline for an international symposium.

Semesta Data Digital

- Role: Data Engineer Contract
- Period: Jan 2024 - Nov 2025
- Location: Jakarta, ID
- Impact: Designed HPC data pipelines - reliability +25%, processing time 40%.
- Context: Operated an 8-server HPC cluster ingesting social-media & news data at scale.
- Technologies: Python, Elasticsearch, PostgreSQL, RabbitMQ, Docker, Grafana
- Highlights:
 - Architected a resilient social-media data pipeline ingesting from diverse sources.
 - Built Grafana + Prometheus monitoring with alerts that prevented server crashes.

Tilikan Indonesia

- Role: Web App Developer Contract
- Period: Sep 2023 - Mar 2024
- Location: Yogyakarta, ID
- Impact: Analytics dashboards - reliability +50%, cross-team efficiency +70%.
- Technologies: Next.js 14, React, TypeScript, MongoDB
- Highlights:
 - Integrated multiple APIs to streamline interdepartmental workflows.
 - Shipped a document-conversion feature for better document management.

Global Data Inspirasi

- Role: Web App Developer Contract
- Period: Jan 2023 - Jan 2024
- Location: Yogyakarta, ID
- Impact: Led a team building real-time data dashboards and reusable components.
- Technologies: Next.js 13, React, TypeScript, TanStack
- Highlights:
 - Applied Agile to accelerate delivery and raise software quality.
 - Delivered scalable apps that gave actionable business insights.

Telkom Indonesia

- Role: Datacomm Product Dev Intern
- Period: Jan 2024 - Mar 2024
- Location: Jakarta, ID
- Impact: Penetration-tested critical web platforms and hardened their security.
- Technologies: Python, SD-WAN, Tableau
- Highlights:
 - Reported vulnerabilities and coordinated fixes with vendors.
 - Aligned security measures with business objectives in an Agile team.

Software engineering projects

PwC Securing AI

- ID: pwc
- Category: Software Engineering
- Context: competition
- Role: Lead Engineer full-stack (team of 4)
- Award: 1st in Indonesia 2nd in Southeast Asia

- Summary: An AI assistant that recommends the best credit options for each user based on their income and spending.
- Problem: People struggle to pick the right credit product for their finances.
- Solution: Built a GPT-style chatbot + dashboard in 14 days, matching users to real credit products.
- Result: From concept to a working AI product in just 14 days.
- Technologies: Next.js 13, Azure, MongoDB 7, Node.js, OpenAI
- Cover image: <https://haikalhilmi.my.id/Porto/lensightoripwc.png>
- Key decisions:
 - MongoDB for fast iteration on uncertain, evolving metrics under a 14-day deadline.
 - Ran the SDLC in parallel with the UI/UX team - execute first, polish last - to ship in 14 days.
 - Azure (hackathon sponsor) + Next.js as the team's fastest, most familiar path to delivery.
- Portfolio detail: <https://haikalhilmi.my.id/projects/pwc>

GMAT Satellite

- ID: gmat
- Category: Software Engineering
- Context: competition
- Role: Technical Lead & Project Manager
- Award: 3rd place Teknofest Turkey 2022 (international)
- Summary: Real-time ground control for an international satellite competition-telemetry, mapping, and live 3D visualization.
- Problem: Needed real-time monitoring of satellite telemetry.
- Solution: Telemetry dashboard, mapping, and 3D satellite visualization.
- Result: Delivered live telemetry under real competition conditions.
- Technologies: React, Three.js, Raspberry Pi, Arduino, XBEE
- Cover image: <https://haikalhilmi.my.id/home/portfolio/gmat.png>
- Portfolio detail: <https://haikalhilmi.my.id/projects/gmat>

University Onboarding Platform

- ID: ppsmb
- Category: Software Engineering
- Context: client
- Role: IT Team Lead (team of 7)
- Summary: Onboarding website and staff task-management system for a major university's incoming students.
- Problem: Committee coordination and information delivery weren't centralized.
- Solution: Information website plus a task management application.
- Result: 1.3M visitors in the first month, with 300+ staff coordinated in one place.
- Technologies: Next.js 12, TailwindCSS, Strapi
- Cover image: <https://haikalhilmi.my.id/home/portfolio/ppsmb.png>
- Portfolio detail: <https://haikalhilmi.my.id/projects/ppsmb>

Robota - AI Hotel Platform

- ID: robota-new
- Category: Software Engineering
- Context: client
- Role: Frontend Lead
- Summary: A B2B platform that tracks hotel room prices across OTAs (which shift hourly) and analyzes competitor pricing & availability.
- Problem: Hotels' OTA prices shift hour to hour, and they couldn't easily see how competitors compared.

- Solution: Migrated the frontend to Next.js 13 (SSR/SSG) and built dashboards over a custom data backend with AI competitor analysis.
- Result: A faster, SEO-ready rebuild, migrated off a legacy React SPA.
- Technologies: Next.js 13, React, TypeScript, TailwindCSS, TanStack Query
- Cover image: <https://haikalhilmi.my.id/home/portfolio/robotav2.png>
- Key decisions:
 - Migrated off a legacy React SPA to Next.js 13 (SSR/SSG) to fix SEO and slow dashboard loads.
 - TanStack Query caches each backend request, keeping heavy real-time dashboards responsive.
 - Set up the frontend architecture and folder structure for the team.
- Portfolio detail: <https://haikalhilmi.my.id/projects/robota-new>

Tilikan

- ID: tilikan
- Category: Software Engineering
- Context: client
- Role: Web App Developer
- Summary: Interactive analytics and data-visualization dashboards built for client reporting.
- Problem: Clients needed easy-to-understand visualizations that integrate with their systems.
- Solution: Interactive dashboards, geographic maps, and PDF export.
- Result: Boosted system reliability ~50% and cross-team efficiency ~70%.
- Technologies: Next.js 14, TanStack, TailwindCSS, ECharts, ChartJS
- Cover image: <https://haikalhilmi.my.id/home/portfolio/tilikan.png>
- Portfolio detail: <https://haikalhilmi.my.id/projects/tilikan>

Petadata

- ID: petadata
- Category: Software Engineering
- Context: client
- Summary: A monitoring and analytics platform that brings scattered public data into one place.
- Problem: Data was scattered across many sources, making centralized analysis hard.
- Solution: Data visualization and aggregation dashboard.
- Result: Turns fragmented data into one clear view for faster decisions.
- Technologies: React, Next.js, ChartJS, REST API
- Cover image: <https://haikalhilmi.my.id/home/portfolio/petadata.png>
- Portfolio detail: <https://haikalhilmi.my.id/projects/petadata>

Atensi - Sentiment Monitoring

- ID: atensi
- Category: Software Engineering
- Context: client
- Summary: Real-time public sentiment and issue monitoring across social media and news.
- Problem: Hard to know which topics are gaining public attention in real time.
- Solution: Visualizes trends, sentiment, and trending topics.
- Result: Spot trending issues in real time-before they escalate.
- Technologies: Next.js, ChartJS, Elasticsearch
- Cover image: <https://haikalhilmi.my.id/home/portfolio/atensi.png>
- Portfolio detail: <https://haikalhilmi.my.id/projects/atensi>

Personal Safety App

- ID: ganjar

- Category: Software Engineering
- Context: competition
- Award: 3rd place national hackathon
- Summary: An award-winning, location-based personal-safety app with live maps.
- Problem: Hard to report and monitor unsafe areas.
- Solution: Mobile app with Google Maps integration.
- Result: Helps people report and avoid unsafe areas, powered by live maps.
- Technologies: Flutter, Google Maps API
- Cover image: <https://haikalhilmi.my.id/home/portfolio/ganjar.png>
- Portfolio detail: <https://haikalhilmi.my.id/projects/ganjar>

FoodCycle

- ID: foodcycle
- Category: Software Engineering
- Context: competition
- Role: Team Lead
- Award: 1st place Hackbiz 180DC UGM 2022
- Summary: An ML platform that detects food waste via image recognition and connects waste generators with distributors.
- Problem: Edible surplus food goes to waste instead of reaching those who can use it.
- Solution: Image recognition to identify food, plus a marketplace linking generators to distributors.
- Technologies: Machine Learning, Image Recognition, Web
- Cover image: <https://haikalhilmi.my.id/Porto/foodcycle.png>
- Portfolio detail: <https://haikalhilmi.my.id/projects/foodcycle>

Omnisocials

- ID: omnisocials
- Category: Software Engineering
- Context: client
- Role: Full Stack Engineer (freelance)
- Status: In production
- Summary: A SaaS platform to manage and schedule content across many social networks from one dashboard.
- Problem: Teams had to juggle many platforms to publish and monitor their content.
- Solution: A unified dashboard that connects to major social networks via their official APIs.
- Result: Manage all your social networks from a single dashboard.
- Technologies: Next.js, Node.js, PostgreSQL, TailwindCSS
- Cover image: <https://haikalhilmi.my.id/Porto/omnisocial.png>
- Key decisions:
 - Cross-platform authentication - secure, scalable OAuth across 10+ social APIs with robust token-lifecycle management for stable connections.
 - Scalable job scheduling - a background processing system for high-volume scheduled publishing with predictable resource usage.
 - Real-time feedback - live client-server updates so users see task status instantly.
 - API traffic management - centralized request handling and throttling to respect diverse third-party rate limits without losing throughput.
- Portfolio detail: <https://haikalhilmi.my.id/projects/omnisocials>

Create Carousels

- ID: create-carousels
- Category: Software Engineering

- Context: client
- Role: Full Stack Engineer
- Summary: An AI tool that turns articles, ideas, or documents into ready-to-post social carousels.
- Problem: Making carousels is time-consuming: research, copywriting, and per-slide design.
- Solution: Turns text input into post-ready carousels with AI & design templates.
- Result: Turns hours of content design into minutes.
- Technologies: Next.js, TypeScript, OpenAI API, TailwindCSS, Supabase
- Cover image: <https://haikalhilmi.my.id/Porto/create-carousels.png>
- Key decisions:
 - AI content generation - turns articles, ideas, or documents into structured, slide-ready copy with prompt design for consistent tone and format.
 - Template-driven design - programmatic slide layouts so generated content maps to on-brand visuals automatically.
 - Export pipeline - renders finished carousels into post-ready images for direct publishing.
- Portfolio detail: <https://haikalhilmi.my.id/projects/create-carousels>

Festify

- ID: festify
- Category: Software Engineering
- Context: client
- Role: Full Stack Engineer
- Summary: A white-label event ticketing platform with built-in QR validation.
- Problem: Event organizers needed a reusable ticketing system for various events.
- Solution: Reusable ticketing architecture with QR validation.
- Result: Reusable ticketing that powers multiple live events-no rebuilds.
- Technologies: Next.js, Supabase, TypeScript
- Cover image: <https://haikalhilmi.my.id/home/portfolio/festify.png>
- Portfolio detail: <https://haikalhilmi.my.id/projects/festify>

Online Competition Platform

- ID: nesco
- Category: Software Engineering
- Context: client
- Role: Frontend Lead (team of 6)
- Summary: Website and dashboards that run an online competition end-to-end.
- Problem: Needed a responsive competition system and dashboard.
- Solution: Website, authentication, and admin/user dashboards.
- Result: Ran a full competition for participants and organizers alike.
- Technologies: Next.js 12, TailwindCSS, REST API, Node.js
- Cover image: <https://haikalhilmi.my.id/home/portfolio/nesco.png>
- Portfolio detail: <https://haikalhilmi.my.id/projects/nesco>

Linkyin.bio

- ID: linkynbio
- Category: Software Engineering
- Context: client
- Role: Full Stack Engineer
- Summary: A bio-link platform (like Linktree) for creators and businesses.
- Problem: Creators & businesses share many different links, making it hard for audiences.
- Solution: Manage multiple links, set priority, and toggle them-all in one URL.

- Result: One link that holds a user's entire online presence.
- Technologies: Next.js, TypeScript, TailwindCSS, Supabase
- Cover image: <https://haikalhilmi.my.id/Porto/linkyinbio.jpeg>
- Key decisions:
 - Customizable link pages - manage, reorder, and toggle multiple links behind one shareable URL.
 - Fast, SEO-friendly delivery - server-rendered profile pages optimized for quick load.
 - Auth & data - user accounts and saved profiles.
- Portfolio detail: <https://haikalhilmi.my.id/projects/linkynbio>

Robota - First Generation

- ID: robota-old
- Category: Software Engineering
- Context: client
- Role: Web App Developer
- Summary: The first generation of the Robota platform, built on React and WebSockets.
- Problem: The dashboard handled large data and rendering poorly.
- Solution: React + WebSocket analytics dashboard.
- Result: The proven foundation the current product was built on.
- Technologies: React, TypeScript, WebSocket, ChartJS
- Cover image: <https://haikalhilmi.my.id/home/portfolio/robotav1.png>
- Portfolio detail: <https://haikalhilmi.my.id/projects/robota-old>

Blockchain Supply Chain

- ID: blockchain
- Category: Software Engineering
- Summary: A blockchain app for end-to-end supply-chain traceability.
- Problem: Supply-chain oversight from farming through to sale.
- Solution: Website with smart contracts on Solana.
- Result: Traceability from farm to sale, secured on-chain with smart contracts.
- Technologies: Next.js 13, Node.js, Solana
- Cover image: <https://haikalhilmi.my.id/home/portfolio/agrichain.png>
- Portfolio detail: <https://haikalhilmi.my.id/projects/blockchain>

Kembangkan Software Studio

- ID: kembangkan
- Category: Software Engineering
- Context: client
- Summary: A project-based software studio supporting small businesses.
- Solution: AI services, web development, and UI/UX.
- Result: Led a team that shipped 8+ products, from websites to ticketing systems.
- Technologies: AI, Web Development, UI/UX
- Cover image: <https://haikalhilmi.my.id/Porto/Kembangkan.mp4>
- Portfolio detail: <https://haikalhilmi.my.id/projects/kembangkan>

Client testimonials

"Haikal supported me for nearly two years on multiple digital products. He quickly understood the business goals, proposed practical solutions, and worked independently across software development, integrations, databases, and data processing. I would gladly work with him again."

- Robert Ligthart, Founder of OmniSocials - Long-term SaaS Client; Amsterdam, Netherlands (profile (<https://www.linkedin.com/in/robert-ligthart/>))

"As Director of PT Aksarakan Bhumi Indonesia, I deeply appreciate his work - he not only built the company's website and digital infrastructure, but also drafted our IT security SOPs and actively took part in negotiations with strategic clients, showing a remarkable combination of technical skill, leadership, and business sense."

- Alamsyah Pangestu, Director, PT Aksarakan Bhumi Indonesia; Yogyakarta, ID (profile (<https://www.linkedin.com/in/alamsyah-pangestu/>))

Source and freshness

- Canonical portfolio: <https://haikalhilmi.my.id/software-engineer>
- Portfolio scope: se
- Markdown export: <https://haikalhilmi.my.id/portfolio.md?scope=se>
- PDF export: <https://haikalhilmi.my.id/portfolio.pdf?scope=se>
- AI discovery file: <https://haikalhilmi.my.id/lms.txt>
- The export is generated from the same typed project and experience data used by the website.