ZAKY IRSYAD RAIS

Full-Stack Engineer | AI & Web3 | 4+ Years of Experience

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PROFESSIONAL SUMMARY

Full-stack engineer across the whole stack - schema and API design through to accessible, responsive interfaces - with two specialisms most full-stack engineers do not have: AI agent systems and on-chain products. Four years in, mostly shipping whole products alone in one to four weeks: Nearly, a social graph whose connections can only be made in person; Zorvo, a Rust and React desktop app for coding agents; Freex, a payment gateway whose settlement contract never custodies merchant funds. Also leads team delivery, and documents every system shipped - six carry their own architecture decision records, so the next engineer does not have to guess. TypeScript, Python, Next.js, React, Node.js, Supabase, Prisma, PostgreSQL, Solidity, OpenAI, MCP. 9 hackathon and competition awards, including 1st place at Startup Hackathon ASTRO 6.0.

TECHNICAL SKILLS

Frontend	Next.js, React, React Native, Expo, Tauri, SwiftUI, Tailwind CSS, Shadcn UI, Radix UI, Material UI, Framer Motion, Recharts, Zustand, TanStack Query, Responsive Design, Accessibility, WCAG, ARIA
Backend	Node.js, Express.js, Fastify, Python async, REST APIs, Server-Sent Events, Supabase, Prisma, PostgreSQL, MySQL, Redis, Pydantic, Zod, OAuth 2.0
Languages	TypeScript, JavaScript, Python, Rust, Swift, Solidity, Move, SQL, HTML, CSS
AI Engineering	OpenAI API, Vercel AI SDK, LangChain, MCP servers, Agent Client Protocol (ACP), Claude Code plugins, RAG, AI agents, tool and function calling, streaming chat, semantic memory, prompt workflows, automation pipelines
Web3	Solidity, Foundry, Hardhat, Wagmi, Viem, RainbowKit, Ethers, Solana, Anchor, SPL Token, Sui Move, Walrus, Seal, x402, ERC-8004, smart accounts, ZK proofs, Circom, snarkjs
Cloud & Tools	Docker, Vercel, Railway, Kamatera Cloud, Google Cloud, PM2, Git, GitHub, Postman, Figma, Dune Analytics, Pinata/IPFS

SELECTED PROJECTS

Nearly - Creator and Full-Stack Mobile / Web3 Engineer

- Built a social graph where a connection can only be made in person - a rotating signed QR handshake plus a co-location check, recorded on BNB Smart Chain testnet by a relayer so users never pay gas.
- Computes trust with personalized PageRank seeded from trusted accounts, so a cluster of fake accounts ends up with near-zero trust.
- Shipped a public Android app with on-device wallets and end-to-end encrypted messaging, a live network-graph site, a relayer API, and five Solidity contracts, backed by 222 test files.

Zorvo - Creator and Solo Desktop AI Tooling Engineer

- Built a native macOS app (Tauri 2, Rust, React 19) that runs coding agents such as Claude Code, Codex, and Qwen Code over the Agent Client Protocol in one chat interface.
- Shipped releases through a signature-verified auto-updater that rejects unsigned update packages, and SHA-256-checks every agent binary it installs.
- Built git worktree isolation, PTY terminals, and GitHub pull-request status into the app, backed by 800+ Rust tests and 140+ frontend test files.

Oraclelane - Creator and Solo Full-Stack Web3 Engineer

- Built a trust and settlement layer for DreamDEX event contracts on Somnia testnet as a contract-first TypeScript monorepo - Next.js, Fastify, Drizzle and Postgres, and a background worker - specified by 11 architecture decision records.
- Implemented a deterministic safety gate that blocks signing when any check fails, a non-custodial EIP-712 redeem authorization flow, and an append-only audit log enforced by a Postgres trigger, backed by 1,105 unit tests across five packages.

GrowFi - Solo Solana GameFi Application

- Solo-built a browser farming GameFi application with Discord authentication, Solana wallets, Phaser 3 gameplay, inventory, marketplace, direct trades, and realtime social features.
- Implemented authentication, garden, inventory, leaderboard, marketplace, trade, deposit, withdrawal, and token transaction APIs using Next.js, Prisma, and PostgreSQL.
- Designed the Anchor/Solana economy for SPL tokens, farm ownership, item inventories, listings, trades, creator profiles, and challenge rewards.

Freex - Solo Full-Stack Web3 Payment Gateway

- Solo-built a payment gateway letting Indonesian merchants accept Rupiah-denominated stablecoin payments directly into their own wallet, with payment links, QR checkout, invoices, and dashboards.
- Designed a non-custodial settlement contract that splits each payment in the same transaction, so no platform account ever holds merchant funds.
- Won 2nd Place at the MetaMask Card Hackathon and placed Top 10 in the Lisk Builder Challenge Round 1.

AgentPay - Creator and Full-Stack Web3 / AI Engineer

- Built a plugin-first, MCP-first payment platform for autonomous agents across X Layer, Celo, and Arc, with hosted web and MCP runtimes.
- Implemented stablecoin payments, smart-account flows, x402 integrations, OAuth, EIP-712 signing, nonces, allowlists, spend caps, and auditable transaction history.
- Shipped developer-facing installers and production deployments that let AI agents discover tools, authorize payments, and execute controlled on-chain actions.

Monicard - Creator and Solo Web3 Game Engineer

- Built solo in one day at Monad Blitz Jogja Vol. 2 with a team of AI agents - real-time on-chain card battles where every draw, placement, and attack is a Monad transaction. Received an Honorable Mention.
- Deployed five Solidity contracts on Monad mainnet and testnet, source-verified on mainnet - card battles, an ERC-721 collection with ERC-2981 royalties, real-time tap duels, and two staking vaults with reentrancy protection - covered by 125 Foundry tests.
- Designed gasless onboarding with browser-generated burner wallets and a relay that forwards only allowlisted contract calls, with exact value, gas caps, and per-sender and per-IP rate limits.

ADDITIONAL PROJECTS

Notch3 · **Mirai AI** · **DARX ZK Dark Pool** · **IDLE AI** · **MonAgent** · **Sentinel Protocol** · **Claude Code Plugins** · **wearelazydev** · **Langclaw AI Mantle** · **Langclaw AI Sui** · **Elaina AI Agents** · **VeritasDAO** · **Bekaspakai** · **Exoduze** · **Langclaw AI Celo** · **Langclaw 0G** · **FLUX Social Chat**

ARCHITECTURE & TECHNICAL WRITING

Architecture Documentation - 6 shipped products, 50 decision records

- Patterns applied and documented: layered architecture, ports and adapters, factory, append-only on-chain registries, off-chain compute with on-chain verification, two-phase settlement, non-custodial escrow, metered usage accounting, and provider abstraction across eleven LLM providers.
- Each product documented in nine parts - system context, containers, components, API surface, runtime flows, data model, security model, deployment, and future work - diagrammed in C4 with Mermaid and specified in OpenAPI.
- 50 Architecture Decision Records in context / decision / consequences form, covering settlement asset and on-chain precision, custody and escrow model, service and repository boundaries, proving strategy, and access-control authority.
- A verification script checks every documented claim against the source it describes, so the documentation cannot silently drift away from the code.
- **Read them:** FreexCrypto | IDLE AI | Langclaw Celo | DARX | Elaina AI | wearelazydev

PROFESSIONAL EXPERIENCE

Freelance Software Engineer - Trading Systems and Web3

Remote | November 2025 - Present

- Built an async Python market-making execution system for BingX perpetual futures for a crypto trading firm, running against a $1M daily volume target in live-market paper trading (BingX VST).
- Designed idempotent order execution - single-attempt order POSTs reconciled by clientOrderId - so a network failure or timeout can never produce a duplicate leveraged position.
- Architected four decoupled layers (decision brain, risk and execution orchestration, market-data providers, market-intelligence synthesis) behind a venue-neutral exchange protocol supporting multiple trading venues.
- Enforced fail-closed startup: margin mode, position mode, and leverage verified against live venue state and aborted on mismatch, with isolated margin, explicit leverage caps, and a single-position limit.
- Integrated multi-source signals (exchange API, CoinMarketCap, Dune Analytics, TradingView relay) with a pluggable LLM decision layer and token-budget controls, under an 80% test-coverage merge gate.
- Built the evaluation layer for the LLM decision path - contract tests on model output, per-call usage and cost telemetry, provider logging, signal attribution, and a realtime backtest harness - so a change of model or prompt could be judged on evidence rather than intuition.
- Built a pre-registered research harness for entry-gate changes - purged cross-validation, multiple-testing controls, and a hash-locked holdout - forward-tested before staged rollout.
- Built the Liquidex market-making analytics dashboard, tracking market-maker versus organic order-book depth, spread, deployed capital, and generated volume across 4 exchanges for two token pairs.
- Implemented wallet-gated, role-based access control with RainbowKit, Wagmi, and Viem across 5 EVM chains, with Supabase persistence, 24-hour historical metrics, and Server-Sent Events live updates.

Volunteer Developer - 7deadlysins Discord Community

Remote | March 2026 - Present

- Built and operated a fleet of 10 Discord bots for a non-profit social community - moderation, verification, tickets, vouches, booster roles, and stream alerts - on one shared application, Supabase database, and VPS, with zero-downtime deploys and automatic rollback.
- Built the community's members-only website in Next.js - Discord sign-in gated on server membership, Spotify-backed song dedications, an anonymous apology board, a shared photo wall, and generated member license cards - on Supabase.
- Built alt-account detection that never bans on a fingerprint alone, a vouch cooldown enforced by a Postgres exclusion constraint, and a TypeScript AI assistant with a tool-calling agent loop, multiple LLM providers, and input and output policy gates.

Frontend Developer - Kommunitas.Net

Yogyakarta, Indonesia (Hybrid) | June 2025 - November 2025

- Built frontend interfaces for Failaunch, Kom LuckyDraw, and Liquidex, translating crypto product requirements into responsive web experiences.
- Implemented Web3 dashboard UI, trading data views, wallet-based access patterns, and real-time data UX using TypeScript, Next.js, and React.
- Collaborated with product and engineering teams through delivery cycles, aligning implementation with crypto-specific requirements and release needs.

Founder / Full-Stack Developer - Bekaspakai

Yogyakarta, Indonesia (Hybrid) | October 2024 - February 2025

- Founded and built a marketplace for second-hand goods and donations, leading product, engineering, operations, and delivery from idea to launch.
- Developed authentication, store registration, product discovery, negotiation, chat, and mobile-responsive marketplace workflows.
- Built and deployed the project with Next.js, Express.js, Vercel, and Kamatera Cloud.

Web Developer / Mentor - Google Developer Student Clubs, Universitas Islam Indonesia
Yogyakarta, Indonesia (Hybrid) | October 2023 - September 2024
- Mentored 5 Google Solution Challenge teams on web development, project execution, and submission readiness.
- Delivered JavaScript and web deployment workshops, including a 26-participant deployment session and a JavaScript workshop with reported 80% comprehension.
- Reviewed learning-track submissions for 20 GDSC members to improve technical readiness and project quality.

Frontend Developer - TEDxUniversitas Islam Indonesia
Yogyakarta, Indonesia | March 2024 - July 2024
- Built responsive website features using Next.js and Tailwind CSS for mobile and desktop experiences.
- Translated UI/UX designs into production-ready components while improving performance, scalability, and usability.
- Used Git-based collaboration to coordinate frontend implementation and feature delivery.

Frontend Developer - Belajarin
Yogyakarta, Indonesia (Hybrid) | November 2023 - February 2024
- Built responsive education-platform pages using Next.js and Tailwind CSS.
- Integrated frontend workflows with backend APIs and collaborated with design and backend teams to ship functional application features.
- Improved accessibility through ARIA labels, WCAG-aware implementation, compatibility fixes, and ongoing UI maintenance.

Frontend Developer - Thundercats Store
Yogyakarta, Indonesia (Hybrid) | May 2022 - July 2023
- Built e-commerce user flows including login, product catalog, cart, checkout, and buyer-seller messaging using React, CSS, Material UI, and API integrations.
- Developed admin dashboards displaying sales, finance, inventory, buyer-processing, and statistics data from backend and database sources.
- Implemented realtime buyer-processing visibility in the admin system to improve order tracking and operational awareness.

AWARDS AND HACKATHONS
- 1st Place, Startup Hackathon ASTRO 6.0 2024 - Bekaspakai Marketplace.
- 1st Place, Mammothon 2025 by Encode Club and Celestia Foundation - wearelazydev.
- 2nd Place, MetaMask Card Hackathon - Freex crypto payment gateway.
- 2nd Place, IHH Web3 Hackathon 2025 by Manta Network and Blockdev.id - IDLE AI.
- Top 20 Winner, Best Deployment Project track - Mantle Turing Test Hackathon 2026 - Langclaw AI Mantle.
- Honorable Mention, Monad Blitz Jogja Vol. 2, 2026 - Monicard.
- Top 58 Teams, HackFest 2023 by Google Developers - Exprimer.
- Top 10, Lisk Builder Challenge Round 1 - Freex crypto payment gateway.
- 3rd Place Best Rating Team, Informatics Expo 2023 - e-commerce information system.

EDUCATION
Universitas Islam Indonesia - Bachelor of Informatics | Expected graduation: 2027

Bangkit Academy led by Google, Tokopedia, Gojek, and Traveloka - Cloud Computing Cohort | February 2023 - July 2023

CERTIFICATIONS & TRAINING
- **Cloud, Backend, and AI:** Bangkit Academy Cloud Computing Cohort; Menjadi Google Cloud Engineer; Belajar Membuat Aplikasi Back-End Untuk Pemula dengan Google Cloud; Belajar Penerapan Machine Learning dengan Google Cloud.
- **Web Development:** Belajar Dasar Pemrograman JavaScript; Belajar Dasar Pemrograman Web; Belajar HTML, CSS, JavaScript, PHP, dan MySQL.
- **Systems and Infrastructure:** The Bits and Bytes of Computer Networking; System Administration and IT Infrastructure Services.
- **Business and Product:** MBA in a Box: Business Lessons from a CEO; Community Summit Career Day 2022.

LEADERSHIP & ORGANIZATIONS
Himpunan Mahasiswa Teknik Informatika, LEM FTI UII
- **Coordinator, Discipline and Field Division - INPUT** | November 2023 - January 2024.
- **Vice Chairman, Organizing Committee - INPUT 2022** | November 2022 - January 2023.
- **Chairman, Organizing Committee - PORSEMATIK 2022** | September 2022 - November 2022.
- **Staff, Commission B, Steering Committee - PORSEMATIK 2022** | July 2022 - September 2022.