BASIL FRANCIS ALAJID

Systems-Oriented Full Stack Engineer

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SUMMARY

Systems-oriented full stack engineer with 5+ years building stateful enterprise applications, complex client-side architectures, and automated test infrastructure. Ships Rust/WASM modules alongside TypeScript. Building AI-powered mobile and web applications with LLM API integration. Experience with Python ML/AI training pipelines (Django, FastAPI, Flask, PyTorch). Builds computational simulation tools with WebGL2 rendering and Web Worker isolation. Comfortable debugging across network, state, and rendering layers. Vetted on Toptal (top 3%), Arc, Mercor, and micro1. Open to remote roles.

EXPERIENCE

Software Engineer | Accenture — Sep 2024 - Present

- Own a stateful case management system for a government agency, enforcing deterministic state transitions across multi-stage workflows.
- Implement SLA-driven assignment routing, decision rules, and flow actions governing case lifecycle progression with zero ambiguous state.
- Build REST integration layer with scoped data pages, normalizing external API responses into internal data models.
- Architect reusable UI sections with conditional visibility rules and cross-case-type validation, reducing duplicated rendering logic by 60%.
- Designed and own the Playwright + CRX E2E test harness, cutting QA cycle time by 40% through deterministic browser automation.

Freelance AI/ML Programmer | Alignerr — Apr 2025 - Dec 2025

- Evaluated and validated Python solutions across Django, FastAPI, Flask, and PyTorch projects for AI model training pipelines on the Labelbox platform.
- Identified logical flaws and validated code correctness across diverse programming challenges, contributing to algorithm optimization and pattern recognition.
- Maintained high accuracy and throughput under time constraints across computer vision and algorithmic logic annotation tasks.
- Collaborated asynchronously with cross-functional AI teams through detailed feedback and quality-driven code reviews.

Quality Assurance Engineer | Blueberry Digital Labs — Jul 2023 - Sep 2023

- Validated data integrity across API responses, database state, and server-side components by tracing request lifecycles end to end.
- Mapped spec documents to system behavior, isolating defects at the boundary between expected and actual state transitions.
- Evaluated QA tooling for integration into CI workflows, providing technical assessments on coverage and false-positive rates.

Freelance Software Developer & IT Consultant | Independent — May 2019 - Present

- Shipped custom software in Java, Python, and C++ for SMEs, scoping requirements, owning architecture decisions, and delivering production code.
- Configured Cisco routing and switching for small business networks, debugging connectivity at the packet level.
- Built client-facing web apps and automation scripts, handling the full cycle from data modeling to deployment.

TECHNICAL SKILLS

Languages TypeScript, JavaScript, Rust, Python, Java, C++

Frontend React, React Native (Expo), Next.js, TanStack React Query, Tailwind CSS, Framer Motion, Three.js/React Three Fiber, HTML Canvas, WebGL2

Backend & Data Node.js, Django, FastAPI, Flask, REST API normalization, binary parsing (Rust + JS, ArrayBuffer, XOR), PostgreSQL, MongoDB

Architecture Deterministic state machines (useReducer), Rust/WASM modules (wasm-pack), Web Workers (Comlink), rAF loops, IndexedDB, PWA

AI/ML PyTorch, Anthropic Claude API, multi-layer system prompt architecture, LLM guardrails, AI training data pipelines, Labelbox, on-device ML/pose estimation

Simulation Agent-based modeling, stochastic SIS infection dynamics, spatial hashing (slotmap), WebGL2 instanced rendering, Canvas2D overlays

Analytics Google Tag Manager, GA4 event tracking, dataLayer integration, A/B testing

Testing Playwright, CRX, E2E browser automation, Vitest, cross-browser QA, spec-to-defect tracing

Tools Git, Linux, Docker, Cisco Networking, Agile/Scrum

CERTIFICATIONS

Toptal (accepted, top 3%) | Arc (accepted) | Mercor (accepted) | micro1 Custom Software Engineer (2026) | Turing Certified | Design Patterns & SOLID Principles (Skillsoft, 2025) | Code Quality, Testing & Development (Skillsoft, 2025) | CompTIA Cloud Essentials+ (Skillsoft, 2025) | Generative AI APIs (Skillsoft, 2025) | CCNA Network Security (Cisco, 2022)

EDUCATION

BS Computer Engineering, Network Administration | AMA University Cebu — Oct 2023

President's Lister | SSC President 2023 | 2020 ML eSports Champion | ARC Research Participant 2023

PROJECTS

STH-Sim Cebu *Next.js 14, TypeScript, Rust/WASM, Zustand, WebGL2, Canvas2D, Recharts, Web Workers, Comlink*

- Agent-based epidemiological simulation modeling soil-transmitted helminth (STH) transmission in Cebu City barangays, calibrated against published medical thesis data on school-aged children.
- Rust/WASM core (target <300KB binary) modeling 500+ agents with stochastic SIS infection dynamics across three STH species (Ascaris, Trichuris, Hookworm), WHO EPG intensity classification, hourly time-stepped daily schedules, and environmental contamination grids with decay and rain spread mechanics.
- Implemented a KAP (Knowledge, Attitudes, Practices) behavioral model with structural dominance gates, reproducing thesis findings that infrastructure access outweighs behavioral interventions. Calibrated to match 20.3% urban vs 4.9% rural prevalence.
- Built an intervention system (MDA deworming, WASH infrastructure, health education, BHW visits) with budget constraints, drug efficacy modeling from published meta-analysis values, and reinfection cycle validation (6-12 month return to baseline).
- WebGL2 instanced renderer with 16-float agent buffer, contamination heatmap overlay, facility placement interaction, and urban vs rural side-by-side comparison mode. Web Worker isolation with transferable ArrayBuffer protocol for zero-copy data transfer.

GymOS *Next.js 16, TypeScript, Rust/WASM, Three.js/React Three Fiber, Zustand, Recharts, IndexedDB, PWA, On-device ML*

- Privacy-first, AI-powered strength training copilot PWA positioned as a real-time in-gym training decision engine. On-device pose estimation (BlazePose-class) for rep counting, tempo detection, and actionable form cues (depth, knee tracking, back angle) without uploading raw video.
- Rust/WASM analytics engine for autoregulated progression: set-by-set load adjustments using readiness signals (sleep, HRV, recent volume), session RPE, and bar speed proxy from motion data. Time-series fatigue/readiness classifier predicting push/maintain/deload recommendations.
- LLM coaching layer with retrieval + tool calls constrained by evidence-based exercise knowledge base. Structured output planner generating sets, reps, cues, and substitutions tied to exercise ontology. Pain-aware substitution system routing injury flags to safe alternatives.
- 3D body mechanics visualization via React Three Fiber. Program-based workout system with useReducer state management, rest timers, exercise picker, and workout summary with PR tracking. Service worker offline support, IndexedDB persistence, and Comlink Web Worker bridge.
- Form-drift fatigue detector: within-session form degradation detection via keypoint trajectory analysis, recommending stopping or adjusting before high-risk reps. Equipment/machine recognition via camera scan for auto-logging and exercise suggestion.

ScentVault *React Native, Expo, Next.js, TypeScript, Anthropic Claude API, PostgreSQL*

- AI-powered fragrance collection and discovery platform with personalized recommendations driven by Claude API integration.
- Designed a three-layer system prompt architecture (BASE/CHAT/DECIDE) in TypeScript with 16 guardrails for response quality and safety, plus collection context schema with buildChatPrompt and buildDecidePrompt exports.
- Built a custom fragrance API backend merging Fragrantica and Parfumo datasets into a unified data layer with structured collection context.

Professor Basil's Lab *Next.js 16, TypeScript, Rust/WASM, TanStack Query, mGBA WebAssembly, PeerJS, Recharts*

- Integrated a C++ GBA emulator (mGBA) into Next.js via WebAssembly, bypassing Turbopack static analysis with runtime dynamic imports, reducing build time from infinite hang to ~3 seconds.
- Ported the Gen 3 binary save parser from TypeScript to Rust compiled to WebAssembly via wasm-pack. XOR decryption, sub-structure shuffling (24 permutations), bit-packed IV extraction. 63 Rust unit tests + 20 JS parity tests.
- Implemented a deterministic battle engine as a pure React reducer: three generational mechanics, 50+ held item effects, weather/terrain systems, and an AI opponent using type-matchup heuristics.
- Built P2P multiplayer via PeerJS with client-side persistence using localStorage for structured state and IndexedDB for binary blobs (ROMs), with TanStack React Query managing PokeAPI cache invalidation.

Manila Watch Atelier *React 18, TypeScript, Vite, Tailwind CSS, Framer Motion, Prisma, PostgreSQL, Google Tag Manager, GA4*

- Full-stack luxury watch lead generation platform with advanced filtering, 20-currency live exchange rate conversion, and multi-step inquiry funnels for a Manila-based grey market dealer.
- Built conversion-rate optimization components: inventory-driven scarcity badges, countdown urgency timers, real-time FOMO view counters, and social proof signals. Lifted inquiry submissions 35% over the static baseline.
- Implemented client-side A/B variant injection via DOM manipulation for hero copy, CTA text, and pricing display. Tracked clicks, inquiries, WhatsApp escalations, and scroll depth via dataLayer pushes to GTM with GA4 event attribution.
- Engineered funnel state persistence with sessionStorage, UTM passthrough from paid campaigns, and cross-domain conversion attribution. QA across Chrome, Safari, Firefox, Edge, iOS Safari, and Samsung Internet.

Open Source npm Packages *TypeScript, Node.js, npm*

- Auditfix: automated security audit remediation with intelligent dependency resolution.
- Playwright Archaeologist: test infrastructure analysis tool for dead test detection and coverage mapping.
- dev-savestate: development environment state serialization and restoration tool for context switching.