

Zhili Mai

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I build backend services, Rust developer tools and game clients. I work in Go, TypeScript, Rust and C++, and connect APIs, data workflows and client code with the builds and releases that ship them.

What I work in

Backend and full stack

Go with Gin, Kratos and GORM

TypeScript with NestJS and LoopBack 4

React and Next.js

PostgreSQL, MongoDB, Redis, BullMQ

REST APIs and event indexing

Rust and developer tools

Rust with Tokio, Actix Web and Request

Serde, Clap, typed SDK and API models

Asset packaging and streaming uploads

Anchor programs and event processing

Tauri desktop apps

Game client and engine

C++ and **Unreal Engine**

CEF browser integration

Lua runtime and debugging

Godot and C++ GDExtension

CMake, Unreal Automation Tool

Delivery and operations

Docker and Kubernetes

GitLab CI and Drone CI

Build, cook and packaging workflows

Release and version automation

Git and Linux

Selected work

Contract work · 2024 – present

Anamon

A game with squads, quests, map exploration and tradable cards. I built its backend and worked on the web client.

- Go game services for squads, levels, map exploration, energy, items, quests, rewards, friends and card trading, on PostgreSQL and Redis.
- A NestJS card backend with persistent match identity, durable retries and safeguards around match finalization and rewards.
- Rust/Anchor programs on Solana for card packs, rewards, redemption and escrow, with a Rust event stream that decodes game events.
- Web client work in Next.js: wallet sign-in, the embedded Unity game, a slot mini-game with claim and mint, and pack opening.

Contract work · 2025

Leagues

A fantasy sports platform where player shares trade on-chain. I wrote its smart contracts and worked across the backend, app and indexers.

- Upgradeable Solidity contracts for player shares, packs, an exchange, paid contests and tournament registration, with EIP-712 signatures for buys, pack opening and registration.
- Go APIs on Gin, GORM, PostgreSQL and Redis for player stats, lineups, contests and tournaments.
- TypeScript indexers for trades, candles, supply and pack transfers, and a React trading app with smart-wallet and paymaster support.

Full-time work · Helix · 2023

HELIX land maps

Tooling that rendered a map image for every parcel in the HELIX land collection.

- A React and TypeScript view places each parcel on a styled 3D city map with its address, area and tier.
- A Puppeteer script runs ten parallel workers over the collection and writes one image per parcel, about 15,000 in all.
- Upload scripts push the results to S3-compatible object storage and to IPFS.

Open source · Public beta

Forge

A local-first workflow engine for coding agents, written in Rust.

- Runs each agent task through a lifecycle of todo, in progress, review, merging and done, with an audit log and cancellation paths.
- Gives every task its own isolated git worktree, and blocks merge until the task's CI steps pass review.
- Ships a REST API, an MCP endpoint, a CLI and a React web UI in one binary, with SQLite persistence.

Open source

Smith and Agent Runtime

A terminal coding agent, and the Rust runtime underneath it.

- Smith has a TUI and a headless mode, with layered configuration, coding tools, workspace and approval boundaries, and session continuity.
- Agent Runtime is the reusable part: provider integration, the tool loop, cancellation, checkpoints, context handling and usage accounting, with deterministic testing.
- The same runtime is shared by three products: Smith, Nyx and Forge.

Game · Playable local slice

Zerkov

An extraction game in Godot 4, built around an offline raid loop.

- One continuous path: title, bunker, loadout, deployment, combat and looting, extraction or death, summary, and back home.
- Game systems for combat, grid inventory, raid progression, enemy AI and persistent player state with local saves.
- HUD, inventory, tasks, maps and summary screens are bound to real local game state.

Desktop app · In development

NovelKit

A local-first writing desk for long fiction, with a setting wiki beside the manuscript.

- A React and CodeMirror editor on Tauri, with Rust commands as the only local file I/O boundary.
- Projects are plain Markdown folders with a derived SQLite index for the wiki of characters, places and plot threads.
- Hovering a name in the manuscript opens its card, and AI-assisted flows continue the text with that context.

More projects

Nyx Rust	Self-hosted agent platform with chat adapters, provider integration, workflows, vector-memory options and WASM plugins.	
FrameRill React · Tauri · Rust	Video editor foundation with SQLite project persistence, an FFmpeg and Whisper pipeline, and preview and scrubbing performance work. In development.	
rust-release Rust	File comparison and hash library with asynchronous processing.	GitHub ↗
Spark TypeScript · Bun	Project scaffolding and a composable pack registry in a Bun monorepo.	GitHub ↗
Workbench NestJS · React	Plugin application with calendar and task widgets, a Kanban board, Docker and systemd deployment, and MCP publication.	
Furry Culture 2020 – 2021	Community web services: Spring and React Native services, Keycloak identity, self-hosted GitLab and Docker CI/CD, OAuth and object storage.	
Native Godot addons C++ · GDExtension	Reusable modules for gameplay abilities, inventory and weapon mechanics, with deterministic state and bounded protocols.	
Hold Till Dawn Godot · C#	Survival game work covering settlement, combat and playable milestones.	
World TypeScript	Colony simulation with job and logistics systems.	
VoxelWorld Unreal Engine 4 · C++	Prototype with gameplay actors, GameMode and Pawn, plugin and Blueprint work.	

Experience and education

Oct 2024 – Present Self-employed Contract developer for a game studio. Several products developed under separate names.	Blockchain and Backend Developer - Designed and built the backend for all of the studio's games, from initial design through delivery. - Developed Go game services for player progression, squads, quests, map interactions, rewards and card trading. - Implemented Rust/Anchor card-pack and reward programs, with supporting Rust event-processing modules.
Feb 2026 – Mar 2026 Duo Confidential client. Part-time.	AI Agent Platform Developer - Primary developer, with a second engineer reviewing. Built the NestJS control plane and Cloudflare Worker sandbox runtime for a multi-tenant AI assistant: agent orchestration, BullMQ chat processing, approvals, sandbox lifecycle and persistent workspace storage. - Added user-scoped integrations, credit usage tracking and React chat and session interfaces.
Dec 2022 – Oct 2024 Helix Game platform. Later part-time work through January 2026.	Game Client, Creator Tools and Platform Development - Implemented Unreal client and studio integration changes across player controllers, game instance, main-menu game modes and native client code. - Built a Rust creator CLI, the Bifrost upload service and an HTTP SDK for asset packaging, streaming uploads, validation and retry handling. - Developed a Go/Kratos inventory service with NFT item and address APIs, contract-event handling, PostgreSQL/Redis integration and deployment tooling. - Maintained CI, release and client deployment tooling across platform and studio updates.
Oct 2020 – Dec 2022 Dataraction	Backend Developer - Developed website backend services using LoopBack 4 microservices. - Built the backend for a live interaction room where users chat and interact in real time. - Coordinated backend APIs across multiple teams and produced API documentation for integration work. - Supported Kubernetes deployment and management for the microservices.
2025 York University	Bachelor's Degree in Computer Science

Open source contributions

ZeroClaw Rust agent runtime	Agent-managed scheduling with cron, at and interval job kinds, six job-management tools, a migration and run history.	#293
ZeroClaw Rust agent runtime	Native structured tool calling for the OpenRouter and Anthropic providers, with provider test updates.	#274
ZeroClaw Rust agent runtime	Verbose logging and observability work.	#251
Codux Agent terminal	Agent lifecycle indicators and terminal and task layout fixes.	#36
godot-minigame Godot WeChat export	iOS pixel-ratio handling, loading-progress normalization and loading-frame behavior.	#2
godot-minigame Godot WeChat export	Guard against synchronous registration of long audio streams, which was associated with input stalls.	#3
HybridAuth PHP social login	QQ authentication provider.	#1134
Nextcloud social login Nextcloud app	QQ login integration, provider autoload changes and localization.	#143 #144 #145
n8n Bark node n8n community node	Notification grouping.	#2