

Dylan Kawalec

Founding Engineer | Principal Architect

Confidential Compute & Privacy (TEE / SGX / TDX, ZK)

Confidential AI Infrastructure • TDX Agent Runtime • Remote Attestation • ZK Authentication

Deep Tech DevRel Lead • Developer Platform Enablement

B.S. Computer Science, Western Governors University • A.A.S. Computer Programming, MiraCosta College

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dylanckawalec.github.io/cv | SF Bay Area • NYC

Professional Summary

I build and ship confidential systems: TEE-backed services (SGX/TDX), zero-knowledge authentication, and privacy-first blockchain infrastructure.

Current build focus: confidential AI runtimes on TDX/SGX with remote attestation, zero-trust verification boundaries, and verifiable execution.

Execution model: founding-engineer architecture with hands-on delivery across APIs, distributed services, Solidity smart contracts, and formal specifications.

Deep Tech DevRel function: documentation, reference implementations, and partner onboarding that convert architecture into shipped integrations.

Focus Areas & Tooling

Compute/Security: Intel SGX/TDX (Fortanix, dstack/TEE), Phala Cloud remote attestation, enclave TLS, MPC, threshold signing.

ZK/Cryptography: ZK authentication patterns, commitments/XOR-proofs, witness encryption concepts (high-level), BFT protocol design, zero-trust verification.

Languages/Frameworks: Python (8+ years: PyTorch, Matplotlib, NumPy, SymPy, cryptography, gmpy), Rust (Tokio, Actix, wavy, serde), Solidity, Go, Node.js/TypeScript/JavaScript.

Systems Methods: TLA+/PlusCal, ORM/concurrency/distributed service design, API and microservice architecture | Docker/GitHub Actions/Terraform | Postgres/Redis.

Automation Tooling: LaTeX, Codex, Warp OZ agents with [Warp Engine](#), Cursor IDE, n8n workflows with [opgrrok](#), CoreThink API, Sonnet 4.5.

Selected Builds (Shipped / Demonstrated)

- **Confidential terminal agents:** [DI](#) (Solidity ERC-8004 interface) and [Warp Engine](#) for attested TDX private-agent execution.
- **Decentralized front-end infrastructure:** [defe](#) Rust CLI for SGX/Fortanix provisioning, enclave TLS, and threshold signing to reduce operator trust risk.
- **Protected password entry:** [ENI6MA demo](#) spanning web, CLI, and on-chain verification flows under confidential research constraints.
- **Zero-trust verifier network:** [cosmic-hack](#) prototype for TEE-only execution and ZK-style boundary verification.
- **Learned compression R&D:** Evoformer-inspired plus zstd pipeline for deterministic, verifiable transforms over structured and unstructured binary data.

Professional Experience

Head of Developer Relations & Solutions Architect *Phala Network*

May 2025 – Dec 2025 (FT)

Confidential compute (TEE) platform: Phala Cloud / dstack workflows

- Wrote Phala Cloud dstack/TEE documentation and reference flows that moved partner teams from evaluation to production confidential-compute deployment.
- Led confidential AI rollout by deploying private agents inside Intel TDX via dstack with attestation-backed execution guarantees.
- Implemented [DI](#) Solidity ERC-8004 contracts and built [Warp Engine](#) for private terminal-agent orchestration.
- Presented dstack/TEE workflows at the Confidential Computing Consortium and onboarded partners, supporting Linux Foundation acceptance through a 17/17 vote.
- Grew dstack repository visibility from 34 to 400+ GitHub stars in six months through docs, demos, and integration support.

Founding Engineer / Principal Architect (Independent Researcher in Cybernetics) ENI6MA Cyber- Summer 2024 – Jan 2026
netics | Cosmic Inc. | ENI6MA LLC
Confidential R&D: zero-trust verification, ZK authentication, deterministic AI safeguards (high-level public synopsis)

- Designed zero-trust authentication architecture for human and AI access, combining TEE-only execution, remote attestation, and ZK verification boundaries.
- Authored and handed over a provisional patent package, private codebase, demonstrations, and confidential research materials at the end of the engagement.
- Wrote 24+ private research papers that formalized systems and methods for zero-trust authentication and verification under confidentiality constraints.
- Built passwordless verifier prototypes and supported a **\$168K** friends-and-family raise through technical narrative, architecture reviews, and demos.

Research & Development Engineer Osmosis Foundation Apr 2024 – Sep 2024 (Contract)
Cosmos infra R&D: decentralized front ends, enclave deployments, signing/neutralityEngineer

- Delivered [defe](#) as a Rust CLI with Fortanix SGX workflows for secure, repeatable decentralized front-end provisioning.
- Implemented enclave TLS key issuance and threshold-signing partitioning to reduce single-operator trust assumptions in Osmosis front-end operations.
- Authored SGX deployment guidance for edge operations, giving Cosmos teams a direct path from prototype setups to production-style environments.

Head of Developer Relations GOAT Network (BTC L2) Jul 2024 – Jan 2025 (Contract)
BTC L2 enablement: docs, integrations, workshops

- Authored [GOAT Network technical documentation](#) for zkMIPS, sequencer APIs, and EVM/Solidity integration paths for BTC L2 teams.
- Delivered the [Founders Club MVP](#) and onboarded 100+ founders through structured deployment workflows.
- Built and managed **40+ ecosystem partnerships**, including major infrastructure providers listed in the [GOAT ecosystem directory](#).
- Led BTC L2 workshops at BTC Nashville and Staking Summit Singapore, then translated workshop feedback into integration runbooks.

Head of Developer Relations Findora / Discreet Labs (now Fractal Network) May 2022 – Oct 2022 (Contract)
Confidential EVM + ecosystem growth

- Led DevRel for Findora's confidential EVM stack, delivering validator, bridging, and privacy workflow education for global ecosystem teams.
- Onboarded **80+ validators** into Findora node operations through direct setup support, strengthening network participation during Series A visibility.
- Supported ETHAmsterdam launch narrative during a **\$12M+** token raise window, alongside Yellow Submarine and FairySwap ecosystem rollouts.

CTO & Principal Engineer Invo Technologies Apr 2023 – Jan 2025 (Contract)
Substrate + privacy rail R&D; developer monetization tooling

- Built the [Invo platform](#) for game-economy monetization and analytics, giving studios tooling for revenue and player-economy visibility.
- Designed a privacy-preserving exchange concept for gaming economies using Substrate architecture, Aleo privacy rails, and EVM interoperability requirements.
- Designed **AIMBC / Yor Bridge** and implemented Solidity contract interfaces for MP-HTLC settlement with OAP attestations and Aleo-mediated verification.
- Led [POEMS \(ZK-TEE research\)](#) implementation, which won Aleo Best Tech 2023 and supported a **\$50K** Aleo Foundation grant.

Independent Research Studio (contracts) Chaotic Beauty LLC Nov 2020 – Jan 2026
C-Corp for R&D, solutions architecture, DevRel contracts

- Ran a contract studio for 6+ month engagements across blockchain teams, covering security architecture, integrations, and developer platform enablement.
- Delivered MPC/threshold-signing custody patterns and key-management hardening to reduce operational key exposure in production digital-asset systems.

Earlier: Tesla (Model 3 Technician; top internal Da Vinci dexterity score) • Zygo (IBF Technician; ion-beam figuring lasers for precision optics on teams connected to James Webb telescope programs) • BNB Chain Labs (US Tech Evangelist) • Harmony (Developer Captain / DAO Governor; \$100K DAO funding; 700+ dev onboarding) • Bridge Builders DAO (Ethereum ecosystem consulting).

Recognition, Credentials & Publications

Selected Awards

- **ETHGlobal SF 2024:** [Zend It](#) — Ledger Tech Award (1st), Polygon Best zkApp (1st).
- **ETHDenver 2024:** AOS Hacker Deathmatch.
- **VeChain × EasyA 2024:** [PowerUp](#) (2nd).
- **Aleo 2023:** POEMS (Best Tech).
- **ETHAmsterdam 2022:** [DegenBox](#) — EPNS — Best Use of Frontend SDK: Boba Network — Best Use
- **KCACTF 2018:** Best Partner (Theatre) — [IMDB](#)

Credentials SimpliLearn / RareSkills: Blockchain Engineering Fellow (May 2023) • Zero Knowledge University (Harmony ONE Foundation): Zero Knowledge University Developer (Mar 2022), [ZKU program repo](#)

Selected Writing, Docs & Research

- [Phala Cloud / dstack Documentation Suite](#)
- [GOAT Network Protocol Documentation](#)
- [CoinFi Research Archive](#)
- [ENI6MA Research Documentation \(public excerpts\)](#)
- [Aleo Developer Enablement Strategy](#)
- [Churn Monetization is the Future of GameFi](#)
- [The Future of GameFi and Gaming: Invo's DLAL and the Digital Economy](#)
- [Bridging Blockchain and Gaming with Invo's Default Currency Solution](#)

Selected Talks, Podcast Hosting & Public Proofs

- [Host, The Blackbox Podcast](#) — Sponsored by Phala Network; independent guest interviews and deep dives across privacy, AI, and blockchain.
- [DevMos 2024: Decentralized Front Ends Workshop](#)
- [Staking Summit: GOAT Network BTC L2 Workshop](#)
- [Bread N' Butter Podcast \(BNB Chain Labs\)](#)
- [Cosmic Public Proof \(YouTube\)](#) — published a carrier-audio proof flow with permalinked verification context in the video description.

Note: ENI6MA/Cosmic research is summarized at a high level under confidentiality agreements; Dylan Rosario is the only named research collaborator.