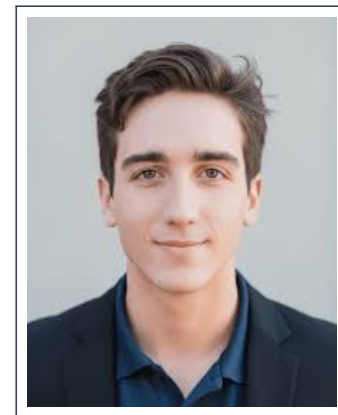# Dylan Christopher Kawalec

Blockchain Research Engineer & Head of Developer Relations (ZKP/TEE)

dylankawalec@gmail.com | LinkedIn | GitHub | Portfolio

San Francisco, CA | Daytona Beach, FL | New York City, NY

Professional Summary

Blockchain Research Engineer and Head of Developer Relations focused on privacy-preserving systems using zero-knowledge proofs (ZKPs) and trusted execution environments (TEEs). Over 5+ years, I've built confidential AI, secure blockchain infrastructure, and privacy tooling across Ethereum/EVM, Bitcoin L2s, Cosmos, and Polkadot/Substrate.

At Phala Network (full-time), I led DevRel for Phala Cloud and helped ship confidential AI agents that run fully encrypted in TEEs, alongside partnerships and integrations that brought dstack/TEE workflows into production for web2 and web3 teams. I also contributed to two filed patents on zero-trust execution in TEEs—using lattice-based hashing, fully homomorphic encryption, and ZKPs to enable verifiable computation without exposing sensitive data.

Previously, as CTO at Invo Technologies, I built a Substrate-based private exchange and swap-routing components with an Aleo ZK privacy rail; at Osmosis, I built decentralized front-end infrastructure that stays credibly neutral (using dstack) and performs well at the edge; and at Discreet Labs/Findora, I helped ship a private EVM stack for confidential transactions.

Key Achievements

Inventor and Co-Author at Cosmic Inc. – Principal Architect & Founding Engineer of provisional patent "System and Method for Zero-Trust Authentication and Verification Using Zero-Knowledge Machine Learning with Software-Based Trusted Execution."

POEMS – $50,000 Aleo Foundation grant: proof.

GOAT Network (BTC L2) – zkMIPS/sequencer documentation, 40+ partnerships, international workshops.

Phala Cloud – dstack/TEE documentation, partnership and developer integration support.

Technical Skills

Languages: Rust, Solidity, Python, TypeScript/JavaScript, Go, C/C++, SQL, Bash

Web & Backend: Actix-web, FastAPI, Node.js, React/Next.js, gRPC, REST, Tailwind CSS

Blockchain: Ethereum/EVM, Bitcoin L2, Cosmos SDK (Osmosis), Polkadot/Substrate, Aleo

Cryptography & Security: ZKPs, MPC, TEEs (SGX/TDX via Fortanix; dstack/TEE), key management, TLS, JWT/RBAC

Formal Methods: TLA+ (formal specification and system verification)

Infra & Data: Docker/Compose, GitHub Actions, Terraform, NGINX, AWS/Azure basics, PostgreSQL, Redis, Supabase, IPFS

Professional Experience

Founder, CEO   *Chaotic Beauty LLC*   Nov 2020 – Present

- California C-Corp used for contract work across the industry. This section includes contracts executed through Chaotic Beauty (6-month minimum engagement; equity and contract-to-hire). Phala Network: full-time; all other roles: contract.
- Cryptocurrency security and digital asset management practice; MPC and TEE-based custody and key management.
- Built wallet-as-a-service modules, treasury dashboards, and APIs; automated token vesting/distribution workflows and infrastructure key protection.

Head of Developer Relations   *Phala Network*   May 2025 – Dec 2025 (Full-time)

- Led DevRel and partnerships for Phala Cloud confidential compute (dstack/TEE). Docs: phalanetwork.mintlify.app/docs.
- Partnerships brought to Phala Cloud: Akave, Rift.trade, Gaia.ai, zkVerify, TinyCloud, OORT, SpaceComputer, Railgun, Fairblock, Anoma, Temporai, StorJ, Self Protocol, Zeko, DIN Key Protocol, Nexus, Aquanode.
- Managed communications and developer assistance for additional clients including Near, Uniswap, Blormmy, Flashbots, OpenZeppelin, Rabbi Finance, Lido, Succinct Labs. Hosted the Blackbox Podcast (blackboxpodcast.com).

- Built an ERC-8004 private audit/security code agent (TEE); created the first decentralized ERC-8004 interface (DI) and developed Warp Engine for AI agent orchestration in Warp Terminal. Owns erc-8004.com.

Head of Developer Relations   *GOAT Network*   Jul 2024 – Jan 2025 (Contract)

- Led DevRel for a BTC Layer 2 initiative (BTCfi); authored zkMIPS and sequencer API documentation and led the Program Accelerator (Founders Club).
- Connected 40+ ecosystem partnerships (API3, DIA, Reclaim, Anchor) and served as primary contact for integrations and application deployment.
- Ran workshops in Thailand, Singapore, and the U.S. Featured in Foresight News: article.

Research and Development Engineer   *Osmosis Foundation*   Apr 2024 – Sep 2024 (Contract)

- R&D on smart account abstractions and decentralized front ends for Osmosis / Cosmos application chains.
- Contributed to defe (Rust CLI) for secure DFE setup with SGX, Fortanix, DNSSEC, and MPC threshold signing; built SGX/TDX embedding tooling and TLS/DNS infrastructure.
- Authored Rust-SGX secure deployment guide: Secure Server Setup for Rust-SGX (Fortanix EDP). Dev chat: t.me/sgxpals.

Research Engineer   *ENI6MA Cybersecurity LLC*   Apr 2024 – Apr 2025 (Contract)

- Independent R&D on human-verifiable authentication and post-quantum methods; documented at GitBook. Focus areas included prime generation and Mobius loops for entropy mixing.
- Created **Cosmic** (independent research): a patent-pending, TEE-only zero-trust architecture for quantum OTP generation using zero-knowledge machine learning. Proof of concept: cosmic-hack and YouTube demo.

Chief Technology Officer & Principal Software Engineer   *Invo Technologies Inc.*   Apr 2023 – Jan 2025 (Contract)

- Built a monetization platform for game developers and player-economy analytics (ourinvo.com).
- Designed a privacy-preserving confidential exchange for video games; developed the Invo SDK on Polkadot Substrate (docs) with an Aleo ZK privacy rail (aleo.org).
- Implemented POEMS (ZK-TEE) and won Aleo Best Tech Award 2023; $50,000 grant proof: LinkedIn post.

U.S. Technology Evangelist   *BNB Chain Labs*   Nov 2022 – May 2023 (Contract)

- Developer evangelism in Solidity/Web3; hosted Bread N' Butter Podcast and led workshops on ZK rollups and decentralized storage.

Head of Developer Relations   *Discreet Labs / Findora*   May 2022 – Oct 2022 (Contract)

- Developer relations for Findora (ZK privacy EVM); coordinated global events/hackathons and delivered workshops (ZKP, validator setup, and bridging).

Developer Captain   *Harmony*   Jun 2021 – May 2022 (Contract)

- Led workshops using lesson plans I authored: Bridge Builders curriculum.
- Approved as Developer DAO Governor (Jan 2022): governance. Secured $100,000 DAO funding (Chaotic Beauty): funding request.
- Co-founded Alexandria (decentralized education initiative): forum. Supported developer onboarding (700+ developers) and DAO ops across multiple teams.

Project Engineering (Freelance)   *Ethereum Network*   Jun 2021 – May 2022 (Contract)

- Founded Bridge Builders DAO and provided smart contract consultation across Harmony, Polygon, Findora, Skale, Ethereum, and Boba.

Open-Source Contributions

POEMS: GitHub   **defe:** GitHub
DI (ERC-8004 interface): GitHub   **Warp Engine:** GitHub
Bridge Builders DAO: GitHub   **Cosmic Hack:** GitHub
BEP218: spec

Notable Projects

Zend It (ETHGlobal SF 2024): proof | demo | GitHub

Rosario-Wang Proof: ENI6MA contribution – team page

POEMS: repo

defe: repo

ERC-8004 tooling: DI | Warp Engine

Cosmic: cosmic-hack | demo

AIMBC / Yor Bridge: trustless atomic bridge design (Aleo as ZK intermediary; OAP attestations; MP-HTLC execution)

Awards & Achievements

ETHGlobal SF 2024: *Zend It* (Ledger Tech Award 1st; Polygon Best zkApp 1st) – proof.

ETHDenver 2024: AOS *Hacker Deathmatch*.

VeChain × EasyA 2024: *PowerUp* (2nd) – proof.

Aleo 2023: *POEMS* (Best Tech) – repo.

ETHAmsterdam 2022: *DegenBox*.

KCACTF 2018: Best Partner (Theatre) – IMDB

Education & Certifications

Professional Qualifications: Blockchain Engineering Fellow – RareSkills (May 2023); Zero Knowledge University Developer – Harmony ONE Foundation (Mar 2022).

Academic Education: B.S. Computer Science – Western Governors University (2020–2021); A.A.S. Computer Programming – MiraCosta College (2019–2020); A.A. Drama & Theatre Arts – MiraCosta College (2017–2018).

Publications & Presentations

Articles & Docs:

"Churn Monetization is the Future of GameFi" (Invo) – Medium

"The Future of GameFi and Gaming: Invo's DLAL and the Digital Economy" (Invo) – Medium

"Bridging Blockchain and Gaming with Invo's Default Currency Solution" (Invo) – Medium

ENI6MA research documentation – GitBook

Phala dstack/TEE documentation – Mintlify docs

GOAT Network documentation – docs.goat.network

Aleo Developer Enablement Strategy – GitHub

Featured Talks:

GOAT Network – YouTube | House of ZK | Defiant Podcast | Crypto Coin Show | Staking Summit

Osmosis – DevMos 2024 (Decentralized Front Ends workshop): YouTube

BNB Chain Labs – Bread N' Butter Podcast: YouTube

Discreet Labs – Findora bridging tutorial: YouTube

References available upon request