

ALEXANDER OLARU

SOFTWARE ARCHITECT / FINANCIAL-MARKET INFRASTRUCTURE

RESUME
UPDATED AUGUST 2026

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Software architecture for markets that have to work.

I have spent more than two decades building mission-critical financial and distributed systems - from the core of U.S. listed-derivatives clearing to regulated-asset settlement on Solana.

PROFILE

TradFi depth. DeFi focus.

Senior software architect and hands-on technical lead specializing in high-throughput clearing, settlement, risk, and market-data systems. Today, I apply that operating knowledge to the design of compliant onchain financial infrastructure: tokenization, transaction processing, wallets, key management, reporting, and atomic settlement on Solana.

BASED IN Zurich, Switzerland	FOCUS Clearing, settlement, risk, regulated assets, Solana	CREDENTIALS CFA charterholder AWS Solutions Architect B.S. International Business & Finance
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CAPABILITIES

Onchain infrastructure Solana, Rust, Pinocchio, Token-2022 extensions, regulated assets, MPC/TSS, wallets	Markets & post-trade Clearing, settlement, FIX/FIXML, trade validation, corporate actions processing, options and futures, STANS/risk management
Distributed systems Rust, TypeScript, Python, Node.js, Java, PostgreSQL, Kafka, Elasticsearch	Cloud & delivery Kubernetes, Pulumi, Azure, AWS, Docker, CI/CD, observability

Experience

Alphaledger

2022 - Present

CTO / LEAD ARCHITECT

Leading architecture and hands-on development of financial-market infrastructure that connects institutional operating models with blockchain settlement.

- **Vulcan Forge:** chief architect, primary implementer, and documentation author for an enterprise platform to issue, manage, finance, and settle regulated real-world assets on Solana.
- **Tokenization and settlement:** built Solana programs and API workflows around Token-2022 extensions, permissioned movement, asset lifecycle, positions, trades, loans, and transaction processing.

Experience

Alphaledger

2022 - Present

CTO / LEAD ARCHITECT - CONTINUED

- **Keys and wallets:** designed MPC/TSS key-management infrastructure and custodial and non-custodial wallet experiences using Blockdaemon Builder Vault, React Native, and Node.js.
- **Institutional integration:** developed FIX-based order-flow components and supported a Tradeweb collaboration for Brokered CD issuance and trading.
- **Investor infrastructure:** designed core components and blockchain integrations for fund subscriptions, redemptions, and position management.
- **Private blockchain tokenization:** architected and built a Hyperledger based system used for recording over \$800 million U.S. municipal debt and government-related assets on blockchain infrastructure.

[Read the Vulcan Forge concepts >](#)

Accenture & Search Technologies

2014 - 2022

SENIOR MANAGER / MANAGING ARCHITECT

Led architecture, technical sales, and delivery for large-scale search, analytics, cloud, and data platforms across global enterprises.

- Architected 3M's Kubernetes and Elasticsearch-based global B2B commerce search platform. Deployed to production in the middle of the COVID-19 pandemic (April 2020).
- Worked with Google on providing feedback and initial rollout support for its Cloud Search offering (enterprise search). Deployed complex enterprise retrieval systems for Electronic Arts, heavily leveraging Cloud Search's sophisticated security trimming and permissioning model.
- Led the rewrite of Intel's data ingestion estate: Python microservices on AWS processing more than 3 billion records across 300+ cloud resources.
- Seattle Children's Research Institute: Architect and lead the implementation of a search and visualization application - built on top of public and internal genomic databases and genome browsers.
- US National Archives: Designed and developed the functionality that allows the search and bulk [UI or API extracts/exports](#) (thousands of text-based, audio or video records at a time) in multiple formats. Documents corpus: tens of millions of items.

TEKsystems & Ikayzo

2011 - 2014

SENIOR FINANCIAL ENTERPRISE ARCHITECT

- **DTCC:** helped validate technology and system architecture for a multi-year modernization of core pricing, real-time risk analytics, reporting, and data platforms.
- **OCC:** contributed to the architecture of a Java/Linux replacement for pricing and margin-risk systems evaluating millions of positions and hundreds of thousands of instruments daily.
- **PIMCO:** architected research storage and search (using Google Search Appliances) across reports, trader commentary, Outlook, SharePoint, and enterprise sources.

Experience

Options Clearing Corporation

2000 - 2011

ARCHITECTURE & DEVELOPMENT MANAGER / SYSTEMS ARCHITECT

Designed and delivered core clearing and risk infrastructure for the world's largest equity-derivatives clearing organization.

- Architected core modules of **OCC's ENCORE system**: post-trade, positions, exercise and assignment, corporate actions and settlement modules supporting 4M+ daily positions and 500K+ financial instruments.
- Designed the FIXML trade validation engine processing 5M+ daily transactions with sub-second turnaround across all U.S. listed options markets. This system supports today **20 options and futures exchanges** across US markets.
- Co-designed data interfaces from clearing systems into Monte Carlo and **STANS-based risk engines**, including margin simulations evaluating 3B+ data points.
- Led the team that architected, designed and implemented **FIXML feeds** serving regulators, exchanges, clearing firms, and service bureaus; represented OCC in FIX standards committees work.
- Directed delivery of a clearing data warehouse holding 500M+ historical transactions.

Writing and open technical work

Former Java editor for InfoQ, Hyperledger Labs contributor, and speaker on blockchain clearing architecture. My current writing focuses on Solana market infrastructure, regulated assets, and disciplined AI-assisted engineering.

[Browse my InfoQ archive >](#)

EDUCATION

- Bachelor of Science, International Business & Finance, Academy of Economic Studies, Bucharest, Romania

CITIZENSHIP

United States and Romania