
QUARK WEI

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SUMMARY

Senior backend and crypto engineer with hands on experience building blockchain wallet infrastructure and leading a 6 person engineering team. Strongest in C# and TypeScript, with recent work in Elixir and Rust. Focused on wallet infrastructure, coin integrations, and secure, reliable backends for production and privacy sensitive systems.

TECHNICAL STRENGTHS

Languages	C# · TypeScript · Elixir · Python · Rust · SQL · Scala
Backend and data	Phoenix · Ash · PostgreSQL · Stored procedures
APIs and integrations	REST · JSON RPC · gRPC · GraphQL · Blockchain integrations
Crypto and wallets	Bitcoin · Ethereum · ERC20s · Blockchain wallet infrastructure · Fee optimization Transaction batching · Travel Rule/TRUST
Other	Azure Pipelines · CI/CD · SOC 2 Compliance

EXPERIENCE

Pre-launch voice coaching startup

December 2024 – Present

Founder & Software Engineer

- **Defined the product, domain, and security architecture for a HIPAA compliant coaching platform** including tenant isolation, immutable client records and document versions, consent revocation, and fail-closed privacy boundaries.
 - **Built a coaching platform in Phoenix LiveView, Ash, and PostgreSQL** including multitenant capability, Google OAuth, coaching workflows, and immutable recap revisions.
 - **Built and validated a differentiable Rust vocal fold physics simulation** for performing inference from recorded speech to vocal tract kinematics.
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Bittrex

Lead Engineer, Wallet Team

April 2021 – Spring 2024

SDE II, Wallet Team

November 2019 – April 2021

- **Managed and served as technical lead for a 6 person wallet engineering team** hiring four engineers and coordinating C#, TypeScript, and Wallet Operations teams supporting more than 100 assets.
- **Increased asset onboarding throughput 24×** by building a generic C# worker and a standard REST contract for TypeScript adapters that normalized JSON RPC, gRPC, GraphQL, and REST blockchain interfaces, plus automated integration testing for our coin integrations and workers.
- **Personally implemented roughly 10–20 end-to-end coin and token integrations** including encrypted key storage and retrieval, transaction construction and signing, deposit and withdrawal lifecycles, detecting confirmations and reorganizations, ledger reconciliation, retries with backoff, and health checks.
- **Implemented the Solana integration** including node infrastructure and worker performance improvements for chain throughput; reviewed ERC20 contracts and other proposed assets for integration and listing risk.
- **Reduced a worst case blockchain ledger reconciliation backfill from more than one year to two days** by batching and parallelizing blockchain, API, and SQL workloads and improving the efficiency of our workers.
- **Led Bittrex's integration with the TRUST network** designing the internal architecture and coordinating with other exchanges for interoperability testing for Travel Rule compliance.
- **Overhauled production deployment controls for SOC 2** adding authorization and access restrictions, CI/CD governance, and rollback procedures through Azure Pipelines.

Amazon FinTech

July 2018 – November 2019

Software Development Engineer

- **Built daily Scala and Spark SQL pipelines on AWS EMR** for retail financial reporting, giving finance leadership visibility within days instead of waiting for the following month's accounting close.
- **Received an organization-wide “Needle Mover” award within four months** for work on a modular, configurable financial data pipeline.
- **Reduced AWS EMR spend by approximately \$6,000 per month** through more efficient cluster acquisition and shutdown; cut backfill runtime 10× by parallelizing processing.

SELECTED WORK

[Karabiner Elements](#)

Open-source contribution

Contributed merged changes to Karabiner Elements for trackpad palm detection and click-event handling, fixing a longstanding event-system bug.

Arkmo

Team project

Team project awarded the \$4,000 Bitcamp 2018 blockchain prize for an ARK-based recipient-verification transaction flow.

EDUCATION

Virginia Commonwealth University

2014 – 2018

Bachelor of Science in Computer Science, Magna Cum Laude

Thomas Jefferson High School for Science and Technology