Noredeen Al-Zu'bi

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EDUCATION

University of Waterloo   Waterloo, ON | Sep 2020 – Apr 2025
B.S in Computer Science, Honors
Coursework: Operating Systems; Computer Architecture; Data Structures and Algorithms; Database Management;
Compilers and Interpreters; Object-Oriented Programming; Functional Programming.

WORK EXPERIENCE

MODERN TREASURY | Software Engineering Intern   San Francisco, CA | May 2023 – Present

- Addressed 3 high-profile race condition incidents by introducing monetary transaction **locks** and automatic object de-duplication, unlocking 10x increases in data ingestion throughput and saving $40,000 in damages per-incident.
- Improved the reliability of data importers by making transaction de-duplication logic **declarative** instead of **procedural** via a **Ruby DSL**, eradicating almost all de-duplication bugs in critical bank import pipelines.

MODERN TREASURY | Software Engineering Intern   San Francisco, CA | Jun – Sep 2022

- Protected customers from losing more than $5,000 per month from unrecouped account verification **micro-deposits** by implementing simultaneous debit and credit transactions, complying with **NACHA** standards.
- Reduced inbound per-month support ticket frequency by 35% through a **Datadog** early warning system that catches stale account balance data before effects propagate downstream to customers as errors or bugs.
- Owned and shipped a customer feature request: dynamically-generated historical balance reports in many formats.

RADIX LABS | Software Engineering Intern | Jan – May 2022

- Reduced lines of code needed to write **scheduler** tests in **Scala** by 90% via **heuristic** benchmarking infrastructure which can combine arbitrarily-complex scenarios, generate them pseudo-randomly, and aggregate test results.
- Unblocked the delivery of a new scheduler engine by designing lossless conversions between old and new scheduler **APIs** (despite different feature sets), allowing the usage of existing **React** frontends and **GraphQL** schemas.

MAVENNET | Software Engineering Intern   Toronto, ON | May – Aug 2021

- Achieved software compliance by integrating **Amazon QLDB** to provide an immutable record of all platform activity.
- Migrated the core backend from **MySQL** to serverless **Aurora** which reduced monthly database costs by 45%.
- Set up the staging and production environments for Neoflow and MetalTrail by adding **CLI** wrappers to the **aws-cdk** utility, automating the majority of DevOps work.

PROJECTS

C-FLAT ⌾   C, Multi-pass Compilation
A maximal-munch scanner and recursive descent parser for a near-complete subset of **C99**, using custom-built trie data structures for extensible keyword scanning.

LETSMUK (2ND PLACE DELTAHACKS) ⌾   Ruby on Rails, Proxies
A **Ruby on Rails** truth and synchronization service which a **Flutter** video chat app used to fetch most recent metadata and as a proxy server to the Agora Video API.

MINISQLITE ⌾   C, SQL, Databases
A light **SQL** memory store which contains an SQL parser, execution engine, and in-memory storage infrastructure, written in **C** using only the standard library.

SKILLS

Languages: Scala • C/C++ • Ruby • Python • TypeScript • Scheme • Java • Bash • Assembly • Ruby on Rails • NodeJS • Flask
Technology: Git • AWS (EC2, ECS, CDK, RDS) • GNU/Linux • Bazel • Docker • PostgreSQL • MySQL • Datadog