

Noredeen Al-Zu'bi

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EDUCATION

University of Waterloo

Waterloo, ON | Sep 2020-Apr 2025

BS 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

- Improved the reliability of data importers by making transaction de-duplication logic **declarative** instead of **procedural** via a **Rails DSL**, eradicating almost all de-duplication bugs in critical bank import pipelines.
- Shipped post-reconciliation **ACH** trace numbers for JPMorgan Chase ACH and GlobalACH transactions.

MODERN TREASURY | Software Engineering Intern

San Francisco, CA | May - Sep 2022

- Eliminated the risk of losing thousands of dollars from unrecouped account verification **micro-deposits** by implementing simultaneous debit and credit transactions, also complying with **NACHA** standards.
- Halved the frequency of bank account support tickets 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 | Algorithms & Schedulers Engineering Intern

Boston, MA | Jan - May 2022

- Simplified writing mock schedule scenarios in **Scala** by building benchmarking infrastructure for **scheduler heuristics** which can combine arbitrarily-complex scenarios and generate them pseudo-randomly.
- 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 40%.
- 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

Implemented 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

Built a **Rails** truth and synchronization service which a **Flutter** video chat app used to fetch most recent metadata, serving also as a proxy server for the Agora Video API.

MINISQLITE

C, SQL, Databases

Using only the standard library, wrote a light **SQL** memory store in **C** which contains an SQL parser, execution engine, and in-memory storage infrastructure.

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 • Datadog