

Skills

- Fluent in Java, Python, C++, Scala, Ruby, OCaml, SQL
- Experience developing general-purpose and SQL compilers in both industry and personal projects
- Interested in compilers and programming language tooling

Experience

- May–Aug 2018 **Software Engineering Intern** | *Snowflake Computing* | San Mateo, California
- Implemented compiler and client support for multi-statement query execution
 - Optimized SQL client's handling of array binds to protect the database from degraded performance
 - Created a UDF to automatically parse and infer the file format and schema of CSV files
 - Improved SQL client telemetry to support real-time client monitoring and troubleshooting
- Sep–Dec 2017 **Relevancy Engineering Intern** | *Wish* | Toronto, Ontario
- Reduced the time to build product image similarity graph from 20 hours to 30 minutes
 - Developed a versioning scheme for Redis to enable consistent data updates across all Redis nodes
 - Implemented backup, restore, and monitoring of graph databases using AWS and Prometheus
 - Created a system to monitor changes in the performance of machine learning models
- Jan–Apr 2017 **Data Platform Engineering Intern** | *Shopify* | Toronto, Ontario
- Built and maintained connectors to extract data from Google Cloud and other third-party APIs
 - Reduced overlap between incremental extraction jobs by 95% after using Spark to investigate late-arriving data from historical logs
 - Automated environment setup and project build process to improve developer efficiency
- May–Aug 2016 **Software Engineering Intern** | *Veeva Systems* | Toronto, Ontario
- Built a Spring service to asynchronously send backend metrics to Google Analytics
 - Spearheaded and took ownership of rewriting of the application's breadcrumb navigation system

Projects

- 2018 **Tiger Compiler** | 🐙 DSouzaM/OCaml-Tiger
OCaml implementation of the Tiger language
- Used ocamllex and ocamyacc to create a lexical analyzer and parser for the front-end
 - Implemented a type-checker with support for recursive and mutually-recursive data types
- 2017 **Language Analysis** | 🐙 DSouzaM/LanguageAnalysis
Comparison of GitHub projects by programming language
- Implemented tokenization and keyword extraction algorithms to generate features from READMEs
 - Experimented with clustering to group repositories and look for programming language trends

Education

- 2015–2020 **Candidate for Bachelor of Software Engineering, 4.0 GPA** | *University of Waterloo*
- Undergraduate Research Assistant (2016): Experimented with Bazel and Java 9 compatibility for an annotation-based type-checking framework

Interests

- Compilers, programming languages
- Court & beach volleyball
- Acoustic guitar, electric keyboard