

Skills

- Fluent in Python, OCaml, Java, C++, Scala, Ruby, SQL
- Passionate about compilers, programming languages, and databases
- Broad range of experience in backend, infrastructure, data, and full-stack engineering

Experience

- Jan–Apr 2019 **Software Engineering Intern** | *Facebook* | Menlo Park, California
- Built a more reliable and robust VSCode extension for Pyre, Facebook's Python typechecker
 - Reduced Pyre's startup time by as much as a factor of 8 using a more efficient build process
 - Improved support for incremental changes, allowing Pyre to process new & changed files incrementally
- 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 simultaneous 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 databases and 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 service to asynchronously batch and publish backend metrics to Google Analytics
 - Spearheaded a rewrite of the application's breadcrumb navigation system

Projects

- 2018 **Tiger Compiler** | 🐙 DSouzaM/OCaml-Tiger
OCaml implementation of the Tiger language
- 2017 **Language Analysis** | 🐙 DSouzaM/LanguageAnalysis
Investigating programming language use-cases by scraping and clustering keywords from GitHub repositories

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 the Checker Framework, an annotation-based type-checking framework

Interests

- Court & beach volleyball
- Acoustic guitar, electric keyboard
- Programming language design and implementation