Matt D'Souza

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🌐 mattdsouza.com
⌨ DSouzaM

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

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Experience

Sep 2019 –   **Software Engineering Intern** | *Facebook* | New York City, New York
- Designed a Python API for programmatically decoding and inspecting Android DEX files
- Built a utility to generate semantic and structural diffs between Android APK files
- Profiled and optimized diffing utility, ultimately reducing runtime by a factor of 90

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

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

Jan–Apr 2017   **Data Platform Engineering Intern** | *Shopify* | Toronto, Ontario

May–Aug 2016   **Software Engineering Intern** | *Veeva Systems* | Toronto, Ontario

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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

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Education

2015–2020   **Candidate for Bachelor of Software Engineering, 4.0 GPA** | *University of Waterloo*
- Undergraduate Research Assistant (2016): Bazel and Java 9 integration for the Checker Framework, an annotation-based type-checker for Java
- Part-time Instructional Support Assistant (2018): Instructional support for CS 241E, an enriched offering of an introductory compilers class
- Undergraduate Research Assistant (2019): Using static analysis to identify potential optimizations for TrueType font bytecode

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Interests

- Court & beach volleyball
- Acoustic guitar, electric keyboard