Ridwan Sharif

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Skills

- Proficient in Go, C, C++, SQL, Python, Scheme/Racket and Bash
- Interested in application security, cryptography, systems design and systems engineering

Work Experience

NCR Corporation May – Aug '17
Infrastructure *Waterloo, ON*

- Designed a NIST compliant password manager to manage private credentials for multiple teams
- Implemented all components of the LDAP aware vault – security protocols (end-to-end encryption, SSL, RSA-2048, SHA-256), the database storage layer, and the client interfaces (CLI, web, etc.)
- Saved ~18,000 USD annually. Used across the infrastructure division, over multiple teams/offices
- Shouldered an operational role with cluster maintenance, ACL management, audit trails, and malware protection (WannaCry). Closely worked with VRA and VMware technologies

Projects

raft *git.io/v59cj*

- Implemented Raft, a fault tolerant & performant distributed consensus algorithm resilient to lossy networks, network partitions and node failures. Based implementation on Diego Ongaro's thesis paper
- Designed log truncations, replications, snapshots, and leader elections to manage replicated states
- Used protocol buffers with gRPC for the underlying RPC subsystem, implemented entirely in Go

mqueue *git.io/vMKXe*

- Constructed an in-memory Kafka-like message broker in Go over an HTTP API
- Designed a concurrent, thread-safe publisher/subscriber architecture with multiple topics
- Built an embeddable client library in Go to interface with the API

lispy *git.io/vyfVt*

- Built a robust Scheme/LISP interpreter in Python based on Peter Norvig's implementation
- Implemented tokenization, parsing, and code validation using abstract syntax tree construction
- Added facilities for lexical scoping, errors, abstract list functions, and user defined data structures

cache *git.io/v5tmR*

- Implemented a caching service storing binary blobs, built to support multitenancy, client & server interceptors, streaming RPCs and ACL control functionalities complete with TLS support.

Other notable projects: **go-workerpool**, **pRSA**, **fzysearch**, **airport**

Education

University of Waterloo Sept '16 – Apr '21 *(expected)*
Bachelors of Computer Science, Honours

- Hack the North (2017, 2016), UW Robotics Club, President's Scholarship (95^{th} percentile)
- Selected Courses: Algorithm Design, Functional Programming, Object Oriented Programming, Combinatronics & Optimization, Logic & Computation