Ridwan Sharif

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Skills

- Proficient in Go, C/C++, Python, Bash, Scheme/Racket using vim/tmux and Git
- Familiarity with application security, systems design, cryptography and backend engineering

Work Experience

NCR Corporation May – Aug, 2017
Infrastructure *Waterloo, ON*

- Developed and deployed a password vault to manage private credentials for multiple teams. Designed to be compliant with NIST standards saving approximately 18,000 USD annually
- Built every component of the LDAP aware Password Vault - from implementing security layers (End-to-end encryption, SSL, RSA-2048, SHA-256) atop the database to developing the GUI, CLI and Web clients for the vault that currently services approximately 155 users.
- Shouldered operational role with cluster maintenance, ACL management, audit trails, malware protection (WannaCry) & several SOS tickets. Closely worked with VRA & VMware technologies

Projects

raft *git.io/v59cj*

Built a key-value store implementing Raft, a distributed consensus protocol for managing replicated state machines over unreliable networks

- Designed log truncations, replications, snapshots, leader elections and used protocol buffers with gRPC for the underlying RPC subsystem
- Implemented a fault tolerant & performant alternative to Paxos, tolerant to network partitions and node failures. Based on this 2014 **research paper** by Diego Ongaro et al.

mqueue *git.io/vMKXe*

- Constructed an in-memory 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 with a command line client
- Implemented tokenization, parsing, abstract syntax trees, and evaluation of valid scheme code
- Complete with valid scheme interpretation of data structures, error handling and lambda calculus

Other notable projects: **goworkerpool**, **cache**, **pRSA**, **swspasswordvault**, **fzysearch**, **airport**

Education

University of Waterloo 2016 – 2021 *(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, MIT OCW: Introduction to Algorithms