

IRFAN SHARIF

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SUMMARY

- Experienced with Go, Haskell, C, C++, Ruby, Python with working knowledge of Rust
- Interested in infrastructure, distributed systems, storage engines and performance engineering

EXPERIENCE

Cockroach Labs, Inc.

New York, NY

Storage/Performance

May – Sept '17

- Designed a flow-control mechanism for all write operations to reduce 99-th percentile latencies
- Authored and implemented an [RFC](#) introducing a dedicated storage engine specialized for Raft's access patterns and persistent state, increased total system write throughput by 14.6%
- Patched **etcd/raft**'s PreVote extension from the Raft thesis paper, formally proved using TLA+
- Forked **grpc/grpc-go**, increased throughput by 12.8% batching syscalls/reducing GC pressure

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Distributed SQL

Aug – Dec '16

- Constructed a distributed/parallel query execution engine based off the DistSQL [RFC](#)
- Implemented distributed sort algorithms and parallel aggregations for analytics workloads
- Designed distributed row de-duplication and highly performant n -way parallel SQL joins
- Improved JOIN performance by an order of magnitude, the subject of an engineering blog [post](#)

Shopify

Ottawa, ON

Production Engineering

Jan – Apr '16

- Designed a dynamic and flexible continuous integration system with auto-scaling build agents
- Built infrastructure to support dynamic workload distribution across shared worker pools
- Optimized the overall scheduling system to handle 1,000+ builds per day saving 60,000 USD/mo

Solink

Kanata, ON

Cloud Migration

May – Sept '15

- Decomposed a single monolith platform into inter-connected and resilient microservices

RESEARCH

uWaterloo Computer Aided Reasoning Lab

Waterloo, ON

Researcher

Oct – Dec '16

- Researched SAT solvers and search space pruning, studied clustering and parallelization strategies

PROJECTS

CFilter

git.io/v6GkV

- Implemented the Cuckoo Filter paper, a probabilistic data structure for set-membership queries
- Trended on the front page of [HackerNews](#) with 30,000+ views, 670+ stars and 30+ forks on GitHub

VCompiler

git.io/v7cGZ

- Wrote a compiler in Haskell with register allocation, code generation, dead code elimination, etc.

Open-source contributions: **coreos/etcd**, **grpc/grpc-go**, **uber/go-torch**

EDUCATION

University of Waterloo

Sept '14 – Apr '19 (*expected*)

Honours Bachelor of Applied Science in Computer Engineering

GPA 3.7