Irfan Sharif

irfansharif.io — irfan@irfansharif.io — in/irfansharifm — github.com/irfansharif

Summary

- Experienced with Go, Haskell, C, C++, Ruby, Python with working knowledge of Rust
- Exposure to performance profiling with pprof, perf, kcachegrind/callgrind and flame graphs

Experience

Cockroach Labs, Inc.   New York, NY
Storage/Performance   May – Sept '17

- Designed a flow-control mechanism for write operations to reduce 99th percentile latencies
- Authored and implemented an RFC introducing a dedicated storage engine specialized for Raft's access patterns/persistent state, experimentally increased system write throughput by 9%
- Patched the Pre-Vote mechanism (from the Raft thesis paper) in the **etcd/raft** implementation

Distributed SQL   Aug – Dec '16

- Constructed the distributed and parallel query processing 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 existing SQL join performance by an order of magnitude using in-memory hash tables

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 optimizing search, studied clustering and parallelization strategies

Projects

Compiler   *git.io/v7cGZ*

- Wrote a compiler in Haskell for a subset of VHDL, authored a transpiler to Java for simulation
- Added code generation, register allocation, dead code and common sub-expression elimination

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

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

Education

University of Waterloo   Sept '14 – Apr '19 *(expected)*
Honours Bachelor of Applied Science in Computer Engineering   *GPA 3.7*