Irfan Sharif

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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 99-th 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 13.63%
· Patched the Pre-Vote mechanism (from the Raft thesis paper) in the **etcd/raft** implementation
· Re-wrote core parts of **grpc/grpc-go** batching system writes and lowered memory footprint

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**, **grpc/grpc-go**

Education

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