Irfan Sharif

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Education

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

Summary

· Experienced with Go, Rust, Haskell, C, C++, Java, Ruby, Python; learning OCaml
· Interested in infrastructure, distributed systems, storage engines and performance engineering

Experience

Amazon, A9.com   *Palo Alto, CA*
Software Engineering Intern (Search)   Jan – Apr '18
· Joining A9/Amazon Search; no idea how it works but it's provocative, it'll get the people going.

Cockroach Labs, Inc.   *New York, NY*
Backend Engineering Intern (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

Cockroach Labs, Inc.   *New York, NY*
Backend Engineering Intern (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 Intern (Infrastructure)   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

Other internships/work experiences elided.

Research

uWaterloo Computer Aided Reasoning Lab   *Waterloo, ON*
Undergraduate Researcher (SAT/SMT Solving)   Oct – Dec '16
· Researched SAT solvers and search space pruning, studied clustering and parallelization strategies

Projects

CFilter   *git.io/v6GkV*
· Cuckoo Filter paper implementation, featured on HackerNews. 670+ stars, 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**, **cerebrum**, **mqueue**