

IRFAN SHARIF

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SKILLS

- Industry experience with distributed systems, storage engines, and microservices
- Go, Haskell, Ruby, C/C++, Python with working knowledge of Git, Redis, Docker, and NGINX

WORK EXPERIENCE

Cockroach Labs, Inc.

Aug – Dec '16

Backend Engineering Intern

New York, NY

- Constructed the distributed and parallel query processing engine in CockroachDB ([git.io/vMKFV](https://github.com/cockroachdb/cockroach))
- 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 a magnitude using in-memory hash tables

Shopify

Jan – Apr '16

Production Engineering Intern

Ottawa, ON

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

Solink

May – Sept '15

Software Engineering Intern

Kanata, ON

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

RESEARCH

uWaterloo Computer Aided Reasoning Lab

Sept – Dec '15

Researcher

Waterloo, ON

- Researched under Prof. Vijay Ganesh on Boolean SAT solvers and optimizing search strategies
- Independently discovered a parallelization algorithm by clustering related SAT clauses

PROJECTS

CFilter

[git.io/v6GkV](https://github.com/irfansharif/cfilter)

- Implemented the Cuckoo Filter paper, a probabilistic data structure for set-membership queries
- Trended on the front page of HackerNews with 14,000+ page views and 500+ stars on Github

Gossip

[git.io/vMrE9](https://github.com/irfansharif/gossip)

- Implemented embeddable distributed gossip networks based on the SWIM paper
- Designed using gRPC and protobufs, an eventually consistent system resilient to partial failures

Open-source contributions: [robfig/glock](https://github.com/irfansharif/robfig/glock), [spf13/cobra](https://github.com/irfansharif/spf13/cobra), [graphql-go](https://github.com/irfansharif/graphql-go)/[graphql](https://github.com/irfansharif/graphql),

EDUCATION

University of Waterloo

Sept '14 – Apr '19 (*expected*)

Honours Bachelor of Applied Science in Computer Engineering

GPA 3.7

- Class Representative, President's Scholarship, Distributed Systems Reading Group
- Selected Coursework: Compilers, Operating Systems, Algorithms