

# IRFAN SHARIF

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## SUMMARY

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- 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

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### Cockroach Labs, Inc.

*New York, NY*

*Storage/Core (?)*

May – Sept '17

- Returning ahead of **cockroachdb/Cockroach** 1.0; it'll be provocative, it'll get the people going

*Distributed SQL*

Aug – Dec '16

- 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 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 multiple agents
- Optimized the scheduling system to handle 1,000+ builds per day saving 60,000 USD per month

### Solink

*Kanata, ON*

*Cloud Migration*

May – Sept '15

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

## RESEARCH

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### uWaterloo Computer Aided Reasoning Lab

*Waterloo, ON*

*Researcher*

Sept – Dec '15

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

## PROJECTS

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### 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 20,000+ views, 650+ stars and 30+ forks 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/robfig/glock), [hashicorp/Serf](https://github.com/hashicorp/serf), [graphql-go/GraphQL](https://github.com/graphql-go/graphql-go)*

## EDUCATION

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### University of Waterloo

Sept '14 – Apr '19 (*expected*)

*Honours Bachelor of Applied Science in Computer Engineering*

*GPA 3.7*