IRFAN SHARIF

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SUMMARY

· Experience with infrastructure, distributed systems, search engines, ML, and storage
· Go, C++, C, Java, Python, Rust, Haskell, Ruby; NumPy, SciPy, Pandas, TensorFlow, Keras

EXPERIENCE

Amazon (A9.com)   *Palo Alto, CA*
Software Engineering Intern (Search Relevance)   Jan – Apr '18
· Authored query reformulation modules to improve system recall and click-through rate by 2.49%
· Led multiple design reviews for proposals outlining measures to improve barcode search relevance
· Leveraged sequence-to-sequence learning to generate alternative search suggestions for users
· Incorporated OCR text around barcodes into ranking models to reduce defects/variance in results

Cockroach Labs   *New York, NY*
Backend Engineering Intern (Storage/Performance)   May – Sept '17
· Designed a dedicated persistent state storage engine for Raft, increased throughput by 14.6%
· Implemented flow-control mechanisms for writes, significantly reducing system tail latencies
· Patched etcd/raft's PreVote extension from the thesis paper, formally verifying using TLA+
· Forked grpc/grpc-go, increased throughput by 12.8% batching syscalls/reducing GC pressure

Cockroach Labs   *New York, NY*
Backend Engineering Intern (Distributed SQL)   Aug – Dec '16
· Constructed core components of new distributed query execution engine, including distributed
  aggregations, sort, row-deduplications, and performant n-way parallel SQL joins
· Improved JOIN performance by an order of magnitude, the subject of an engineering article

Shopify   *Ottawa, ON*
Production Engineering Intern (Infrastructure)   Jan – Apr '16
· Built an auto-scaling build system with dynamic, load-balanced workload redistribution
· Optimized the overall scheduling system to handle 1,000+ builds per day saving 60,000 USD/mo

RESEARCH (UWATERLOO)

Distributed Systems Group *(Consensus Protocols)*   May '18 – Present
· Investigating speculative execution/parallel commit protocol variants with Prof. Bernard Wong

Computer Aided Reasoning Lab *(SAT/SMT solvers)*   Oct – Dec '16
· Researched search space pruning, clustering and parallelization strategies with Prof. Vijay Ganesh

PROJECTS

Kura
· Building an end-to-end encrypted, synchronized, distributed file system for capstone project

CFilter
· Cuckoo Filter paper implementation, featured on HackerNews. 700+ stars, 30+ forks on GitHub

Open-source contributions: **coreos/etcd**, **grpc/grpc-go**, **uber/go-torch**, **cerebrum**, **mqueue**

EDUCATION

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