

Farzan Bhuiyan

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EDUCATION

University of Waterloo

Waterloo, ON

Bachelor of Computer Science (Honours), Minor in Combinatorics and Optimization

Sept 2021 – Apr 2026

Research Assistant: Accelerating probabilistic inference with novel **Rust** and **OCaml** compiler, supervised by Dr. Yizhou Zhang

Activities: Intramural Basketball/Soccer Captain, Volleyball, WATonomous (Perception Software Developer - C++/CUDA)

EXPERIENCE



Balyasny Asset Management

May 2025 – Aug 2025

Software Engineer Intern - Treasury Tech

New York, NY

- Proposed and led new **Rust** ETL framework to replace Python, cutting latency **120x** and scaling throughput to **1M+ events/sec** for trade systems using lock-free queues, batch I/O, zero-allocation and async I/O for real-time ingestions
- Owned entire design and development of a distributed **FastAPI** tool deployed on **Kubernetes**, using websockets, **Kafka** pub/sub, protobuf, a high-throughput DB sink and in-memory cache to sustain **300K+ events/min** with **<100ms** latency
- Built thread-parallel linear programming constraints with **Python**, **gRPC/protobuf** for trade allocations, cut latency **60%**
- Engineered real-time alerts invoked from a gRPC listener for unallocated trades, preventing **1M+** in market exposure costs



BetterUp

Jan 2025 – May 2025

Software Engineer Intern - Infrastructure

San Francisco, CA

- Built a **Go** CLI tool to deploy to EKS clusters from local, automating builds, networking (DNS/LB/VPC), autoscaling, data stores (Redis/Postgres/S3), and **Datadog** logging, cutting deployment time from days to **<30 min** for **30+** microservices
- Integrated an AI remediation agent into the CLI using message queues and async workers/**goroutines** to detect & auto-fix deployment errors with a p95 of **<5s**, reducing manual debugging and unblocking teams with reliable, self-serve deploys
- Added commands for job/cronjob deployments enabling ML workflows to be deployed **90-100%** faster with autoscaling



Ripple

Sept 2024 – Dec 2024

Software Engineer Intern - ML Platform

San Francisco, CA

- Designed and built a new machine learning tool for the detection of inefficient data platform queries and optimized recommendations for every SQL, PySpark, or Delta Table, reducing average costs by **26%**, tested on **600+** queries
- Built a RAG pipeline that integrates metadata, AST parsing, semantic search and resource estimation models evaluating **100K+ historical queries** with LLM optimization techniques for **< 5%** hallucination and **82%** SQL equivalence rate
- Shipped as a Python module with **PySpark** and **Delta Lake** APIs for direct use in Databricks notebooks by all engineers



Tesla

May 2024 – Aug 2024

Software Engineer Intern - Build Systems

Palo Alto, CA

- Built a distributed system in **TypeScript** to parallelize automerges across **100+** branches for monorepos using parallel BFS to traverse the dependency DAG, improving firmware time-to-deploy by **5x** and reduced compute from **128** to **8** CPU cores
- Scaled horizontally on **K8s**; coordinated merge workers with **RabbitMQ** (fan-out, back-pressure, retries) to **3x** throughput
- Replaced **Bash** with **Ruby** endpoints to submit Jenkins jobs to HPC clusters and emit resource-aware **SLURM/LSF** specs (CPU/memory, partitions), shard builds via job arrays and enforce idempotent retries, improving p95 and cluster usage



Rodan Energy

Sept 2023 - Dec 2023

Software Engineer Intern - Markets Dashboard

Toronto, ON

- Developed time-series energy forecasts with ML algorithms (XGBoost, Regression Forest, RNN) achieving a MAPE of **<2%**
- Led new frontend changes to remove **154 npm vulnerabilities**, cut build times by **62%** and launch dev server **135x faster**



NCR Corporation

Jan 2023 – Apr 2023

Software Engineer Intern - Channel Services Platform

Waterloo, ON

- Built backend APIs for money movement on Teller software servicing **200M+** bank users on **Spring Boot** microservices
- Played a pivotal role in building a robust work management microservice with **Java**, **Kafka**, **Kubernetes** and **Cassandra**

TECHNICAL SKILLS

Languages: Python, Go, C++, Rust, TypeScript, Ruby, Scala

Data: SQL, RabbitMQ, Kafka, Redis, Airflow, Spark, Hadoop

ML: PyTorch, CUDA, ONNX, MLFlow, LangChain, sklearn, NumPy

Infra: Linux, Git, Docker, K8s, Protobuf, Terraform, AWS, Jenkins