# YOUSOF HOSNY

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## EDUCATION

**University of Waterloo**                                                                **Sept 2019 – Present**

*Hons. BCS Computer Science, Minor Combinatorics & Optimization – **GPA: 3.94/4***

## EXPERIENCE

**SingleStore (MemSQL)**                                                                **May 2022 – Aug 2022**

*Software Engineer Intern (Database Storage Engine Team)*                                 *San Francisco, CA*

- Developed SingleStore distributed relational database engine (C++) designed for HTAP workloads featuring separation of storage/compute and point in time recovery
- Implemented metadata tables allowing users to query recovery progress of distributed nodes during database restarts, restores, and attaches
- Architected calculation of transaction log replay progress from blob storage integrating with **AWS**, **Azure**, and **GCP** using a heuristic with 5% margin of error
- Designed a lock-based tracker enabling publisher/subscriber interaction between master and replica nodes to monitor blob downloads during database recovery

**Activision**                                                                          **Sept 2021 – Dec 2021**

*Software Engineer Intern*                                                                *Vancouver, BC*

- Developed RESTful based microservices serving over **4 million** concurrent users, handling online services for all **Call of Duty** titles using **Python / MySQL / Databricks**
- Developed game engine client code (C++) responsible for handling multiplayer functionality by interfacing with online services for all CoD players on PC, Playstation, and Xbox
- Released a new moderation service to handle all toxicity and cheating reports in new CoD titles with support for configurable player bans saving **5 hours** a week of engineer wrangling time

**Activision**                                                                          **May 2021 – Aug 2021**

*Software Engineer Intern*                                                                *Vancouver, BC*

- Developed multi-level LRU cache using local memory and configurable **Redis** instances used by multiple services through internal Python framework
- Implemented player moderation priority queue with an average daily size of **1 million** player reports allowing concurrent workers to batch actions against players
- Containerized service releases using **Docker** and **Kubernetes** and monitored production trace logs in Kibana and live health metrics in Grafana

**The Product Initiative (ConnectEd)**                                                    **July 2020 – Aug 2020**

*Software Engineer Intern - Full Stack*                                                   *Toronto, ON*

- Developed an app to match remote university students based on common interests using a serverless stack with **React** and **Firebase** cloud services

## PROJECTS

**Proust - Small Proof Assistant**

*Technologies: Scheme (Racket)*

- A type theoretic proof assistant based on lambda calculus and the Curry-Howard correspondence

## TECHNICAL SKILLS

**Languages**: C++, Python, C, Golang, SQL, JavaScript/TypeScript
**Technologies**: Git, Docker, Kubernetes, Databaricks, MySQL, AWS, Azure, GCP
**Tools**: GDB, Linux/GNU Tools, Vim