



NAYEF AHMED

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EXPERIENCE

- **Microsoft Corporation** | Software Engineer Intern
C#, Redis, Kusto, Azure | Redmond, WA | Aug - Dec 2018
 - Worked on Azure Infrastructure team to architect an Ownership Enforcer (OE) service that enforces PR code reviews for compliance and security assurance
 - Improved performance of OE service by designing multi-layered Redis Cache pipelines from the ground up thus **reducing VSTS API calls by 150%**
 - Redesigned existing cache systems to optimize lookup time by implementing **horizontal scaling across multiple shards**
- **Watonomous (Self-Driving Car)** | Path Planning Engineer
C++, ROS, RViz, CMake | Waterloo, ON | Sep 2017 - Present
 - Working on a student-led design team to transform a Chevrolet Bolt EV into a level 4 autonomous vehicle for the SAE AutoDrive Challenge
 - **Implemented visualization of the car's trajectory** using waypoints generated from a trajectory rollout A* algorithm
- **Microsoft Corporation** | Software Engineer Intern
C#, C++, Unity, XAML, HoloLens | Vancouver, BC | Jan - Apr 2018
 - Worked on Mixed Reality Viewer (MRV) team to create a cross-platform Windows/HoloLens app for viewing 3D files used by **3 million+ monthly users**
 - Integrated 3D asset conversion/optimization pipeline into MRV app to support all 3D file formats **resulting in a 3x decrease in asset transcoding time**
 - **Increased user retention by over 35%** through collaborating with UI/UX designers and data analysts to implement a new content promotion system
- **Unicell Body Company** | Full-Stack Developer
Java, PHP, MySQL, React Native | Toronto, ON | May - Aug 2017
 - Iterated on internal quoting tools, **utilized by 1000+ employees**, to increase usability and allow for better visualization of company performance
 - Automated core data processing, **improving inventory management efficiency by 5x**

PROJECTS

- **Flappy Goose** | RTOS Game in an Embedded Environment
C, Keil RTX RTOS, LPC1768 Microcontroller
 - Recreated Flappy Bird game using a Keil MCB1700 board in a real-time OS
 - Used **task synchronization and interrupts** to update LCD graphics, player score, game physics, and handle peripheral I/O simultaneously
- **Study Space** | PennApps XVI (Google Prize Winner)
Android Things, Java, Firebase
 - Created IoT device and companion app to **display real-time occupancy** of specific locations on campus using 'Android Nearby' communication platform
- **SmartGlove** | IEEE Hardware Hackathon (3rd Place Winner)
Arduino, C, Gyroscope/Accelerometer
 - Designed glove to wirelessly **control IoT devices using simple gestures** by sending commands through local TCP WiFi socket using two Arduino Nanos

SKILLS

- **Languages**
 - Python
 - C++
 - Java
 - PHP
 - C#
 - C
 - JavaScript
 - SQL
- **Technologies/Frameworks**
 - OpenCV
 - LAMP Stack
 - Redis
 - ROS
 - Node.js
 - .NET Core
- **Tools**
 - Git
 - Arduino
 - Unity
 - Azure
 - Linux
 - NumPy

EDUCATION

- **University of Waterloo**
2016 - 2021
BASc in Honours Mechatronics Engineering Co-op, Option in Artificial Intelligence
- **Relevant Courses**
 - Real Time Operating Systems
 - Data Structures and Algorithms
 - Microprocessors and Digital Logic
 - Microprocessor Systems and Interfacing
 - Machine Learning (Coursera)

ACCOMPLISHMENTS

- President's Scholarship of Distinction
- Chancellor's Scholarship
- Richard Kiyonaga Award
- TDSB Top Scholar (99.3% avg)

HOBBIES/INTERESTS

- Varsity Ultimate
- Road Biking
- Hiking
- Speedcubing
- Robotics
- Snowboarding