NAYEF AHMED

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EXPERIENCE

Facebook AI Research | Software Engineer Intern
C++, Python, OpenCV, PyTorch | Menlo Park, CA | May - Aug 2019
- Worked within the Applied Research Computer Vision team to create a face detection and tracking pipeline **running on all Facebook videos in real-time**
- Benchmarked precision and recall of various detection models (**Mask R-CNN, DFSD, Viola-Jones**) and tracking algorithms on a 600k SOA video dataset
- Collaborated with leading researchers (Ross Girschick and Yufei Wang) to anonymize faces in the video dataset using detection and tracking results

Microsoft Corporation | Software Engineer Intern
C#, Redis, Kusto, Azure | Redmond, WA | Aug - Dec 2018
- Architected Ownership Enforcer (OE) service within the Azure Infrastructure team to enforce PR code reviews for compliance and security assurance
- Improved performance of OE service by designing multi-layered Redis Cache pipelines from the ground up, **reducing VSTS API calls by 150%**
- Redesigned existing cache systems to **optimize lookup time by 90%** through implementing horizontal scaling across multiple shards

Microsoft Corporation | Software Engineer Intern
C#, C++, Unity, XAML, HoloLens | Vancouver, BC | Jan - Apr 2018
- Worked on 3D Viewer 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 the app to support all 3D file formats, **decreasing asset transcoding time by 70%**

Watonomous (Self-Driving Car) | Path Planning Engineer
C++, ROS, RViz, CMake | Waterloo, ON | Sep 2017 - Present
- Collaborating on a student-led design team to transform a Chevrolet Bolt EV into a level 4 autonomous vehicle for the SAE AutoDrive Challenge
- Visualized car's trajectory with waypoints from dynamic window A* algorithm

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
- **Improved inventory management speed 5x** by automating data processing

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 **simultaneously update LCD graphics, player score, game physics, and handle peripheral I/O**

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

EDUCATION

University of Waterloo
2016 - 2021
BASc in Honours Mechatronics Engineering Co-op
Option in Artificial Intelligence

Charles III University of Madrid
2019
Study Abroad Semester

Relevant Courses
- CS231n - Convolutional Neural Networks (Stanford)
- Machine Learning (Coursera)
- Real Time Operating Systems
- Data Structures and Algorithms

SKILLS

Languages
- Python
- C++
- C#
- C
- Java
- JavaScript
- PHP
- SQL

Technologies/Frameworks
- OpenCV
- ROS
- Pandas
- NumPy
- PyTorch
- MATLAB

Tools
- Git
- IPython
- Redis
- Linux
- Hadoop
- Azure

ACCOMPLISHMENTS

- President's Scholarship of Distinction
- Google Prize @ PennApps XVI
- 3rd Place @ IEEE Hardware Hackathon

HOBBIES/INTERESTS

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