



NAYEF AHMED

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EXPERIENCE

- **Facebook AI Research** | Software Engineer Intern
C++, Python, PyTorch, Torchscript | New York, NY (Remote) | May - Sep 2020
 - Working with the AI Platform team to design and implement **high-performance NLP building blocks** (Tokenizer, Vector, Vocab) for PyTorch
 - Training a BERT model with **masked-language modeling** and **next-sentence tasks** to improve performance on IWSLT'14 English-German translation dataset
 - Supporting upcoming PyTorch releases to facilitate NLP research and demonstrate feasibility of new features for internal adoption
- **Lyft Level 5** | Software Engineer Intern - Autonomous Driving
C++, Python, TensorFlow, OpenCV, BigQuery | Palo Alto, CA | Jan - Apr 2020
 - Trained new classifier with the Perception team capable of detecting traffic light bulb shapes with **90%+ accuracy** on an extremely unbalanced dataset
 - Designed a regression test suite which can provide a **binary decision** for engineers when deciding whether to release a new model to the vehicle
- **Facebook AI Research** | Software Engineer Intern
C++, Python, OpenCV, PyTorch, Presto | Menlo Park, CA | May - Aug 2019
 - Worked with the 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** | Software Engineer Intern
C#, Redis, Kusto, Azure | Redmond, WA | Aug - Dec 2018
 - Architected Ownership Enforcer (OE) service on the Azure Infrastructure team to enforce PR code reviews for compliance and security assurance
 - Improved performance of OE service by designing multi-layered a Redis caching pipeline from the ground up, **reducing all API calls by 150%**
- **Microsoft** | Software Engineer Intern
C#, C++, Unity, XAML, HoloLens | Vancouver, BC | Jan - Apr 2018
 - Worked on the 3D Viewer team to create a cross-platform Windows/HoloLens app for viewing 3D files used by **3 million+ monthly users**
- **Watonomous** | Path Planning Engineer - Autonomous Driving
C++, ROS, RViz, CMake | Waterloo, ON | Sep 2017 - Apr 2019
 - Collaborating on a student-led design team to transform a Chevrolet Bolt EV into a Level 4 autonomous vehicle for the SAE AutoDrive Challenge

PROJECTS

- **Flappy Goose** | Game in an Embedded RTOS Environment
 - Recreated Flappy Bird game using a Keil MCB1700 board in a **real-time OS**
- **Study Space** | PennApps XVI (Google Prize Winner)
 - 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
International Exchange Semester
- **Relevant Courses**
 - CS231n - Convolutional Neural Networks (Stanford)
 - Practical Deep Learning for Coders (fast.ai)
 - Machine Learning (Coursera)

SKILLS

- **Languages**
 - Python
 - C#
 - SQL
 - C++
 - Java
 - JavaScript
- **Technologies/Frameworks**
 - PyTorch
 - Pandas
 - ROS
 - OpenCV
 - NumPy
 - TensorFlow
- **Tools**
 - Git
 - AWS
 - BigQuery
 - Jupyter
 - Linux
 - Redis

ACCOMPLISHMENTS

- Recipient of \$70,000+ in scholarships
- Int'l Experience Award
- Google Prize @ PennApps XVI
- 3rd Place @ IEEE Hardware Hackathon

HOBBIES/INTERESTS

- Varsity Ultimate
- Road Cycling
- Running
- Mentorship
- Robotics