NAYEF AHMED

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EXPERIENCE

Facebook AI Research | Software Engineer Intern
C++, Python, PyTorch, TorchScript | New York, NY (Remote) | May - Sep 2020

- Collaborating with the AI Platform team to design and implement **high-performance NLP building blocks** (Tokenizer, Vector, Vocab) for PyTorch
- Profiling CPU performance of text preprocessors on several datasets using Flame Graphs and applying concurrency to **decrease load times by over 60x**
- Supporting upcoming PyTorch releases to facilitate NLP research and demonstrate the feasibility of new features to drive internal adoption
- **Won 2 awards** for creating a Workplace VC "quickchat" feature at the Global Summer Hackathon, receiving overwhelming interest to ship to production

Lyft Level 5 | Software Engineer Intern - Autonomous Driving
C++, Python, TensorFlow, OpenCV | 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 capable of providing a **binary decision** to engineers about whether a new model is ready to be released to the vehicle

Facebook AI Research | Software Engineer Intern
C++, Python, OpenCV, PyTorch, Presto | Menlo Park, CA | May - Aug 2019

- Implemented a detection and tracking pipeline capable of **running on all Facebook videos in real-time** as part of the Computer Vision team
- 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
- Integrated a multi-layered Redis cache pipeline, **reducing all API calls by 70%**

Microsoft | Software Engineer Intern
C#, C++, Unity, XAML, HoloLens | Vancouver, BC | Jan - Apr 2018

- Created a cross-platform Windows/HoloLens app for viewing 3D files used by **3 million+ monthly users** as part of the 3D Viewer team

Watonomous | Path Planning Engineer - Autonomous Driving
C++, ROS, RViz, CMake | Waterloo, ON | Sep 2017 - Apr 2019

- Designed costmap generation algorithms using a **2-layered occupancy grid** to help transform a Chevrolet Bolt EV into a Level 4 autonomous vehicle

PROJECTS

Study Space | PennApps XVI (Google Prize Winner)

- Created IoT device to **display real-time occupancy** of building on campus

Flappy Goose | Game in an Embedded RTOS Environment

- Recreated Flappy Bird game using a Keil MCB1700 board in a **real-time OS**

SKILLS

Languages

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

Technologies/Frameworks

- PyTorch
- Pandas
- ROS
- OpenCV
- NumPy
- TensorFlow

Tools

- Git
- AWS
- BigQuery
- Jupyter
- Linux
- Redis

EDUCATION

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

Charles III University of Madrid
Sep - Dec 2019
International Exchange Semester

Relevant Courses

- CS231n - Convolutional Neural Networks (Stanford)
- Practical Deep Learning for Coders (fast.ai)
- Machine Learning (Coursera)

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