





Nayef Ahmed

 /nayef211
 /in/nayef211
 nayefahmed.com
 nayef.ahmed211@gmail.com

PROGRAMMING SKILLS

Languages: Python, C++, Rust, Java, SQL

Technologies: PyTorch, NumPy, Pandas, Conda, OpenCV, Jupyter, TensorFlow, Git, Mercurial, AWS, GCP

EXPERIENCE

Meta AI – Software Engineer

New York, NY

PyTorch Text/MultiModal | Python, C++, PyTorch, BigQuery

Jun 2021 - Present

- Contributed new components (datasets, transforms, models) as a **core maintainer of the torchtext library**, engaging with both the open source (OSS) and internal communities
- Created a multi-modal representation model capable of understanding images, videos, text, and audio by jointly training a vision/text encoder and a transformer-based fusion layer; **owned success of the project as the tech lead**
- Managed a summer intern** to add a T5 model for text generation tasks; wrote a detailed project plan, provided mentorship, pushed for internal customer adoption, and represented the intern during final evaluations
- Drove quarterly PyTorch releases to facilitate NLP research and broadcast new features to increase library adoption

Facebook AI – Software Engineer Intern

New York, NY

PyTorch Text | Python, C++, PyTorch, TorchScript

May - Sep 2020

- Designed and implemented **high performance NLP building blocks** (Tokenizer, Vector, Vocab) for PyTorch
- Profiled CPU performance of text transforms on several datasets using Flame Graphs; applied concurrency to **decrease load times by over 60x**
- 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

Palo Alto, CA

Autonomous Vehicle Perception | Python, C++, TensorFlow, OpenCV

Jan - Apr 2020

- Trained a classifier capable of detecting traffic light bulbs with **90%+ accuracy** on an extremely unbalanced dataset
- Designed a regression test suite capable of providing a **binary decision** to engineers when deciding whether to release a new model to the autonomous vehicle fleet

Facebook AI Research – Software Engineer Intern

Menlo Park, CA

Computer Vision | Python, C++, OpenCV, PyTorch, Presto

May - Aug 2019

- Implemented an object detection and tracking pipeline capable of running on all videos uploaded to FB 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 Personally Identifiable Information (including faces and license plates) in the video dataset using detection and tracking results

Microsoft – Software Engineer Intern

Redmond, WA

Azure Infrastructure | C#, Redis, Kusto, Azure

Aug - Dec 2018

- Architected Ownership Enforcer (OE) service to enforce PR code reviews for compliance and security assurance; integrated a multi-layered Redis cache pipeline, **reducing all OE API calls by 70%**

Microsoft – Software Engineer Intern

Vancouver, BC

3D Viewer | C#, C++, Unity, XAML, HoloLens

Jan - Apr 2018

- Created a cross-platform Windows/HoloLens app for viewing 3D files used by **3 million+ monthly users**

PROJECTS

WRAP: Whiteboard Recognition and Analysis Platform capable of digitizing notes from lecture recordings

Study Space: An IoT solution to **display real-time occupancy** of lecture rooms on campus

EDUCATION

University of Waterloo

Waterloo, Canada

BASc in Honours Mechatronics Engineering, Co-op; Minor in AI; Dean's Honours List

Sep 2016 - Apr 2021

Charles III University of Madrid

Madrid, Spain

International Exchange Semester

Sep - Dec 2019