

Nayef Ahmed

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SKILLS

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

Technologies: PyTorch, TensorFlow, BigQuery, Presto, NumPy, PyBind, Pandas, OpenCV, Jupyter, AWS, GCP

EXPERIENCE

Meta AI – Software Engineer

PyTorch Text/MultiModal

New York, NY

Jun 2021 - Present

- **Tech leading a team of 4 engineers** to deliver a multi-modal representation model capable of understanding images, videos, text, and audio by jointly training a vision/text encoder along with a transformer-based fusion layer
- Developed new components (datasets, transforms, models) as a **core maintainer of the PyTorch Text library**, engaged in feature discussions and solicited feedback from both the open source and internal communities
- **Managed a summer intern** to develop a transformer-based encoder-decoder model (T5) for text generation tasks; wrote a detailed project plan, provided mentorship, pushed for customer adoption, and represented the intern during final evaluations
- **Increased library adoption 300% YOY** by driving quarterly PyTorch releases and broadcasting new features to researchers

Facebook AI – Software Engineer Intern

PyTorch Text

New York, NY

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

Autonomous Vehicle Perception

Palo Alto, CA

Jan - Apr 2020

- Trained a detector capable of identifying traffic light bulbs with **90%+ precision** 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

Computer Vision

Menlo Park, CA

May - Aug 2019

- Implemented a highly scalable object detection and tracking pipeline capable of **processing over 20k videos in parallel**
- Benchmarked precision and recall of various detection models (**Mask R-CNN, DFSD, Viola-Jones**) and tracking algorithms on a **600k Scenes-Objects-Actions video dataset**
- Anonymized Personally Identifiable Information (like faces and license plates) in videos using detection and tracking results

Microsoft – Software Engineer Intern

Azure Infrastructure

Redmond, WA

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

3D Viewer

Vancouver, BC

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

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

Waterloo, Canada

Sep 2016 - Apr 2021

Charles III University of Madrid

International Exchange Semester

Madrid, Spain

Sep - Dec 2019