Kushashwa Ravi **Shrimali**

Software Developer · ML Engineer

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Education

International Institute of Information Technology, Naya Raipur
Naya Raipur, India

B.Tech in Computer Science and Technology
July 2016 - 2020

- CGPA: 9.38/10

Industry Experience

Quansight
Remote

Software Developer (PyTorch - Open Source)
May 2021 - Present

- Contributing to PyTorch core code-base with the teams at Quansight and Facebook
- Projects contributed: Sparse Project, NumPy Compatibility, OpInfos for testing, Structured Kernels, PyTorch's special module
- PRs: https://github.com/pytorch/pytorch/pulls/krshrimali
- Tech Stack: C++, Python, CUDA, JIT, Compilers, TorchScript, NumPy, pybind11

NVIDIA
Santa Clara, USA

Software Developer Intern (PyTorch Dev Team)
January 2020 - April 2020

- Contributed to introduce Type Promotion support for Unary Universal UFuncs in PyTorch for both CUDA and CPU devices.
- Improved test framework for universal unary functions in PyTorch. Fixed CUDA level bugs for PyTorch functions.
- Added inverse trigonometric functions to PyTorch for both CUDA and CPU devices.
- Tech Stack: C/C++, CUDA (Framework), CUDA GDB, PDB (Python Debugging), Nsight Compute, Python (for tests)

Care.AI
Florida, USA

Applied AI Engineer Intern
April 2020 - September 2020

- Optimized existing face recognition models in the pipeline for edge devices using TensorRT (C++) and created Python bindings for utility functions to optimize the code further.
- Implemented a speech recognition model using Kaldi for hand wash detector. The model was also deployed on a sample android app.
- Technical Stack: TensorRT, PyTorch, Android Studio (for PoCs), Kaldi, C/C++, Python, RabbitMQ, Amazon Kinesis.

Rapid Rich Object Search (ROSE) Labs, NTU Singapore
Singapore

Visiting Researcher (Computer Vision)
May 2019 - July 2019

- Created a sample dataset of 1M license plates using augmentation and parallel processing (to speed up the process).
- Trained custom model using YOLO and OCR-Net for license plate recognition, taking Top-5 accuracy for double license plates from 55% to 85%.

Big Vision LLC
California

Computer Vision and Machine Learning Intern
March 2018 - May 2019

- Worked on deploying Computer Vision applications for text detection in C#.
- Implemented BRISQUE method for no reference image quality assessment and wrote a detailed blog on it's working.
- Optimized facial landmark detection models: Kazemi and LBF in OpenCV for 9-points instead of 68 points.

Skills

Frameworks	PyTorch, TensorRT, OpenCV, NumPy, Spacy, Deepstream, JAX
Programming Languages	C, C++, CUDA, Python
Skills	Unit testing, MLOps, Optimization, Software Development, DevOps

Extracurricular Activity

Technical Blog, YouTube Channel

Technical Blog - PyTorch, OpenCV, C++ and YouTube Channel
July 2018 - Present

- (Blog) Received > 70k views and >10k unique users from >100 countries in the world. (YouTube Channel) Received 24.9K views, and 1.8K watch hours and 664 subscribers so far. Live streams on open source, C++, PyTorch (C++) and OpenCV (C++).

PyTorch, OpenCV, BuffetCodes, Malloc(42)

Open Source Contributions

- Contributed BRISQUE NR-IQA algorithm to the quality module of OpenCV. Created BuffetCodes organization, included multiple Docker container scripts, testing, CI/CD pipelines, and a File Manager library in C++. Malloc(42) organization also includes a compiler reproduction and more. Contributed to PyTorch in testing, sparse, and special modules.