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

TECHNICAL BLOG WRITER - PYTORCH, OPENCV, C++   *July 2018 - Present*

• Received >50k views and >10k unique users from >100 countries in the world.

Student Activity Council   *IIIT Naya Raipur*

SCIENCE AND TECHNICAL HEAD   *July 2018 to July 2019*

• Organized Techno-Cultural fest of the institute and headed the science and technology events in the fest and started multiple clubs in the institute: AIML Society, TSoC (programming and development). All the work was done along with the team of SAC and President, SAC.