

Kushashwa Ravi Shrimali

SOFTWARE DEVELOPER · RESEARCH 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
- Awarded with Chairman's Gold Medal for Leadership

Industry Experience

Lightning AI

Remote

RESEARCH ENGINEER

February 2022 - Present

- App developed using React, TypeScript: Monaco Code Editor Integration with Gradio with Abstract Syntax Tree checker for the code
- Co-author of Lightning AI's Flashy App: performs Auto ML on Cloud. Helped in getting daemon threads running for FiftyOne and Gradio servers on the cloud.
- Maintainer and code owner of libraries in the Lightning ecosystem and developing apps using Lightning AI
- Projects contributed: Lightning Flash, PyTorch Lightning, torchmetrics
- Components developed: Flash Gradio, Flash Fiftyone, Flash Serve and Hyper Parameter Space Generator using Ray and Scikit Learn

Quansight

Remote

SOFTWARE DEVELOPER (OPEN SOURCE: PYTORCH)

May 2021 - February 2022

- 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
- PyTorch PRs
- 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)

Open Source

Bismuth (KDE's Tiling Window Manager Extension)

CONTRIBUTOR

July 2022 to Present

- Working on porting the typescript implementation of the window manager to C++. Some of it also involves implementing from scratch to merge with the KWIN and QT libraries.
- PRs for Three Column Layout and Focusing Window by Direction Event - Work In Progress

PyTorch

CONTRIBUTOR

- Please see all my PRs here.
- Fixed torch.prod for FP16 input tensors and FP32 output tensors.
- Added arcosh, arcsinh and arctanh to unary ops in PyTorch. This also includes tests and formulae for auto-grad in PyTorch.
- Add floating type promotion support for (some of the) Unary Floating UFuncs. This work acted as a motivation to revise type promotion strategy for unary functions.
- Mentors: Mike Ruberry (Facebook), Michael Carilli (NVIDIA), Piotr Bialecki (NVIDIA), Will Feng (Facebook)

C++ File Manager

PROJECT OWNER

- Developed C++ File Manager library while ignoring specified extensions, with an additional output of a tree-like structure (can be used in mark-downs directly).
- Library portable as a binary and separate header file in any C++ codebase.
- The output tree can be written to a text file using a flag with the binary.

OpenCV

CONTRIBUTOR

- Fixed errors for no faces detected in facial landmark detection model.
- Added implementation of No Reference Image Quality Assessment (BRISQUE). This included adding tests for 32-bit, 64-bit Windows/Linux/OSX systems, Arduino micro-controllers as well.
- Mentors/Contributors: Tom Clunie

Extracurricular Activity

Live Streaming Side Projects

DEVELOPER

YouTube and Twitch

September 2020 - Present

- Porting a Tiling Window Manager to C++
- Learning Rust. The goal is to port Kilo to Rust.
- Building an app using GTK3 library in C
- I stream daily on Twitch about all my side projects. Channel: BuffetCodes.

Technical Blog

TECHNICAL BLOG WRITER - PYTORCH, OPENCV, C++

July 2018 - Present

- Notes from the Rust Book (work in progress)
- Talked about PyTorch C++ API, implemented non-trivial projects using the C++ API.
- Explained cropping a circle in OpenCV in both C++ and Python.
- Understanding how vectors are implemented in GCC compiler.
- Received >50k views and >10k unique users from >100 countries in the world.

Student Activity Council

SCIENCE AND TECHNICAL HEAD

IIIT Naya Raipur

July 2018 to July 2019

- Organized Techno-Cultural fest of the institute and headed the science and technology events in the fest.
- 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.

OpenStudy Inc

AMBASSADOR

Palo Alto, California

July 2013 to July 2015

- Led a team for OpenStudy Newsletter Programme (2 times) and once as a designer.
- Role to manage and organize the community at OpenStudy.