

# KUSHASHWA RAVI SHRIMALI

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## EDUCATION

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<b>International Institute of Information Technology Naya Raipur</b> Bachelors in Technology Department of Computer Science and Engineering	<i>July 2016 - Present</i> CGPA: 9.4/10.0
<b>Kendriya Vidyalaya STPS Suratgarh</b> Senior Secondary High School, Class XII.	<i>July 2014 - June 2016</i> Overall Percentage: 94.8
<b>Kendriya Vidyalaya STPS Suratgarh</b> Secondary High School, Class X.	<i>July 2012 - July 2014</i> Overall Percentage: 95.0

## CARRIER OBJECTIVE

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To work for an organization in the field of Computer Vision and Deep Learning which allows me to furnish my skills and grow along with the organization objective.

## WORK EXPERIENCE

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**NVIDIA, Santa Clara, California** January 2020 - July 2020  
*Software Developer Intern (Deep Learning Frameworks, PyTorch Team)*

Working as a Software Developer Intern at NVIDIA (Santa Clara, Headquarters). The tasks accomplished will be updated on completion of the internship.

**Rapid Rich Object Search (ROSE) Labs, NTU Singapore** May 2019 - July 2019  
*Visiting Research, Computer Vision and Deep Learning Intern* Prof. Alex Kot

- On-site internship at ROSE Labs, NTU Singapore under Prof. Alex Kot (Director, ROSE Labs). Worked on Automatic License Plate Recognition technique in real time using PyTorch in both C++ and Python. Used YOLO based network and achieved 85% accuracy for Single Line License Plates and Double Line License Plates (tested on real time dataset of Singaporean Vehicles).

**Big Vision LLC and LearnOpenCV, California** March 2018 - May 2019  
*Computer Vision and Machine Learning Intern* Dr. Satya Mallick, CEO

- Worked from home in writing blogs and working for clients for Big Vision LLC. Became OpenCV Contributor during my internship, and worked on several projects using C, C++ and Python.

**Indian Institute of Information Technology and Management, Gwalior** December 2017 - January 2018  
*Visiting Student Researcher* Prof. Anupam Shukla

- On-site internship at IIITM Gwalior and worked on A\* Search Algorithm to understand communication between a robot and a UAV.

**OpenStudy, Palo Alto** June 2013 - June 2016  
*Ambassador* Dr. Preetha Ram and Dr. Ashwin Ram

- The responsibilities included to actively promote the website and it's cause amongst the students and to guide them through the beginning steps for the website. Made sure the smooth following of Code of Conduct of OpenStudy. Also worked as a leader of OpenStudy Newsletter Programme for two editions as well as Designer in one edition.

### **Student Activity Concil, IIIT Naya Raipur**

Science and Technology Head

Coordinated clubs running under SAC: Artificial Intelligence and Machine Learning Club, The Society of Coders. Also became the Technical Coordinator of Annual Technical and Cultural Fest - TechNovate 2019.

## **PROJECTS**

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### **Series of Blogs on PyTorch C++ API**

The project discusses important elements of PyTorch C++ API and practical applications of Deep Learning projects implemented using Libtorch. The blogs are published at my portfolio website.

### **Implementation of Portrait Bokeh Mode using Deep Learning and Computer Vision, on Faces**

The project aims on implementing Portrait Bokeh Feature using OpenCV and PyTorch. It automatically detects the faces and blurs the background. The project has been open sourced at my GitHub profile.

### **Book Dimensionality Calculation using Homography Matrix and QR Code Detection**

*Mentor: Dr. Satya Mallick, CEO OpenCV, Big Vision LLC and LearnOpenCV*

The project aims at dimensional measurement of a book cover using Homography and Ratio comparison in OpenCV. The project has been open sourced at my GitHub profile.

### **Paper Implementation of No Reference Image Quality Assessment (BRISQUE NR-IQA)**

*Mentor: Dr. Satya Mallick, CEO OpenCV, Big Vision LLC and LearnOpenCV*

Implementation of NR IQA Method (BRISQUE) in OpenCV using C++ and Python. The project uses LIBSVM and OpenCV libraries. NumPy Library in Python is used for vectorization. The project has been open sourced at my GitHub profile.

### **OpenCV Contribution: BRISQUE Quality Module**

*Partner: GitHub user @clunietp*

Contributed BRISQUE algorithm to the quality module in OpenCV's extra modules. The source code was written in C++ and tested on Android, Java, Python Bindings, Windows, Linux environments successfully. This project was my first major contribution to one of the biggest Computer Vision Library: OpenCV.

### **Text to Image Synthesis using Generative Adversarial Networks**

*Mentor: Dr. Vivek Tiwari*

- Reproducing results from StackGANs, StackGAN++, WCGANs for Oxford-102, Caltech UCSD Birds Dataset.
- Working on resolving problems with GANs (slow training and loss functions)
- Team: Krutika Bapat and Saurabh Kumar Singh

### **Deep Learning implementation of a Neuron using Stochastic Computing and ASIC Design**

*Mentor: Dr. Ramesh Vaddi*

- Implementation of a Neuron in ASIC Design and using Verilog

- LFSR, Comparator and ASIC, Verilog Implementation
- Team of 11 Members completed the project.

### **Obstacle Avoidance Robot**

*Mentor: Dr. Debanjan Das*

- Use of ultrasonic sensor to detect obstacles around the robot. The ultrasonic sensor moves 360 degrees around and then decides the path to be chosen.
- Used OpenCV and Arduino Interface.

### **Cartoonization of Image using Image Processing**

The project aims on cartoonifying faces using Image Processing Algorithms. I did this project to learn more about Image Processing and it's algorithms. The project has been open sourced at my GitHub profile alongside a report. Cartoonization using Bilateral Filters, Edge Filters, Blurring, Deblurring, Gaussian Noising and more. Gives Evil Look, Alien Look and more. It has been implemented in both C++ and Python.

## **TECHNICAL STRENGTHS**

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**Computer Vision and Deep Learning Libraries  
Software & Programming Languages**

PyTorch, Tensorflow, OpenCV, NumPy  
Linux, C, C++, CUDA, Python, Javascript

## **ACADEMIC ACHIEVEMENTS**

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Runner Up at Industry Academia Meet in Project Presentation in the field of Data Analytics at IIIT-NR (Home Institute)

Provided Scholarship by the home institute (IIIT-NR) for Academic Performance for 3 Consecutive Years.

Graduated with 95%+ marks in Science and English Subjects at the Senior Secondary High School Level.

Got 22,000 Rank in Joint Engineering Entrance Exam (Mains) out of 1.2 Million Students.

Achieved 1st Rank in the State in a Competition Conducted by State Government.

Participated in National Science Congress to present our project on Agriculture Advancement.

## **EXTRA-CURRICULAR**

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Co-Organized TechNovate 2019 - Institute's Technical and Cultural Festival

Volunteered in TechNovate 2018

Awarded in All India Essay Writing Competition held by UNIC (India and Bhutan), at Shri Ram Chandra Mission Ashram

Debate competition on "Does RTI play vital role in removing corruption from India?" - Winner in against to the motion

Runner up in Article Writing in Connaissance 2k16 (Literary Fest of the Institute)

Won Coding Competitions at TechNovate 2018 - Game of Codes and Breaking Bugs

Special Mention in Chhattisgarh Mock Indian Parliament as IIIT President

## **PERSONAL TRAITS**

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A disciplined person.

Highly motivated and eager to learn new things.

Strong motivational and leadership skills.

Ability to work as an individual as well as in group.

Love to share knowledge.