

Shanu Kumar

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Second Year, Undergraduate
Indian Institute of Technology, Kanpur

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ACADEMIC DETAILS:

Examination	Institute	Year	CPI/%
Bachelor of Technology	Indian Institute of Technology, Kanpur	2015 – Present	9.1
Class XII (CBSE)	Adarsh Vikash Vidyalaya, Patna	2015	92.3
Class X (ICSE)	Lohianagar Mount Carmel High School, Patna	2013	90

ACADEMIC ACHIEVEMENTS:

- All India Rank 2499 in Joint Entrance Examination (Advanced) 2015 among 150,000 candidates
- Recipient of Merit-cum-means scholarship awarded by IIT Kanpur for two consecutive years.

MAJOR PROJECTS:

• Object Tracking and Detection

Dec'16 – Jan'16

Project Supervisor Prof. Vinay P. Namboodiri

- Increased the accuracy of high speed KCF tracker with kernelized correlation filters by using convolutional layers as feature maps and implemented Single Shot Detector for object detection in Caffe.
- Studied research papers based on Deep Regression Networks for tracking and detection.

• Wheat Grain Assaying

Nov'16 – Dec'16

Project Supervisor IAS Gaurav Agrawal

- Aimed to facilitate the process of automatic quality assessment of grain from images of spread out sample.
- Proposed a general approach for converting an image of grains with impurities into a binary image.
- Implemented Watershed segmentation for segmenting each particle from binary image and classified each particle into grain or impurity using SVM and K Nearest Neighbour on features extracted from training data.

• Handwriting Recognition

June'16

Project under Programming Club, Sci - Tech Summer Camp

- Awarded "Special Mentions Award" for Analytical Skills and Teamwork.
- Trained deep convolutional neural network architecture to recognize characters from image using Torch framework on the dataset which consists of characters from variety of font types.
- Used stochastic gradient descent as a training method involving optimization of transformed images in different convolutional layers and achieved 97% accuracy on the test data.
- Analyzed accuracy and cost function over many iterations and optimized them through graphical analysis.

• Automated Library

March'17

Microsoft's Code.fun.do

- Developed a Web Application in Django to catalogue bibliographies and library members.
- Used Goodreads and Bing API to display information about books like book review and book cover.
- Included features like automatic fine calculation, reminder mail and search among books and members.
- Installed in Prayas, a student endeavour to teach marginalized kids and Gymkhana library.

KEY COURSES UNDERTAKEN:

Computer Science	Data Structure And Algorithm	Fundamentals of Computing
Electrical Engineering	Microelectronics Signals Systems Networks	Control Systems Analysis Introduction to Electronics
Mathematics	Probability And Statistics	Linear Algebra & ODE

TECHNICAL DETAILS:

Languages	C, Python, Lua, HTML, CSS
Libraries	Caffe, Torch, OpenCV, Git, Django
Tools	AutoCad, Android Studio, MATLAB
Operating Systems	Linux, Windows