

# Siddhartha Saxena

2nd year Computer Science and Engineering Undergraduate Student

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## Education

IIT Kanpur B.Tech. Computer Science and Engineering 9.6/10  
Vijayverghiya Bal Vidyalaya, Kota AISSSE (CBSE), 93.8%  
Delhi Public School, Rewari AISSE (CBSE), 10/10

## Research interests

I am broadly interested in the field of machine learning especially Deep Learning, Probabilistic Machine Learning and their applications in Computer Vision.

## Awards and Fellowships

Secured AIR 190 in JEE Advanced 2015 out of 150k students who qualified through JEE Mains  
Secured AIR 777 in JEE Mains 2015 out of 1.5 million students  
Received KVPY fellowship 2015 given to only 400 students in science stream from all over India  
Received Merit Certificate in Mathematics for being in top .1% students in class XII examinations

## Projects

**Improving accuracy of cGANs for image transformation** Undergraduate Project mentored by Prof. Vinay Namboodiri  
December 2016 - Present  
Implementing the paper titled "Image-to-Image Translation with Conditional Adversarial Networks" in Torch which uses newly developed GANs framework for generating a particular image.  
Improving accuracy of depth estimation from a single image using this model.

**Interactive Bayesian Document Clustering** Course Project under Prof. Piyush Rai  
August 2016 - November 2016 | **Code\*** | **Report\***  
Building a clustering model that clusters the given data according to the user feedback via rejection. The feedback mechanism modifies the prior, down-weighting the probability of rejected clusters and increasing for the accepted ones. [link to paper]  
Building document clustering model, clustering documents according to the topics contained in them (extracted through Latent Dirichlet Allocation), and implementing it on the datasets.

**AUV-IITK (Autonomous Underwater Vehicle)** Software Subsystems under Prof. K.S Venkatesh and Prof Sachin Y Shinde  
December 2015 - December 2016 | **Code\***  
The team finished 1st runner-up in NIOT SAVE, the National level AUV competition in its debut.  
Applied Pose Detection via SIFT and SURF Descriptors for an L-shaped gate.  
Applied Convolutional Neural Networks for pattern detection using Tensorflow framework.

**Face Recognition and Handwriting Recognition** ACA Project  
February 2016 - April 2016 | **Code\***  
Did Handwriting Recognition on MNIST dataset using a feedforward neural network and tried quadratic, cross entropy and softmax loss function to improve accuracy.  
Did Facial Recognition using Principal Component Analysis on Matlab.  
Classified movie reviews dataset part of NLTK corpus as positive or negative using Naive Bayes.

\* Web Page links

## Relevant Courses

Introduction To Computing  
Data Structures and Algorithm\*  
Differential Equations\*  
Probability and Statistics\*

Introduction To Machine Learning Techniques  
Bayesian Machine Learning\*  
Linear Algebra  
Computer Organisation\*

\* expected to be completed before April 2017

## Languages and Skills

English and Hindi  
Torch, Tensorflow, OpenCV, C++, L<sup>A</sup>T<sub>E</sub>X, Python, Numpy, Matlab, Octave, Microsoft Office, HTML/CSS

## Extra-Curricular

**Google Developer's Group** Gave a talk on Computer Vision and its application in Robotics.

## Activities

**Core Team Member, VOX POPULI** Journalism body of IIT Kanpur  
Conducted a Survey about the Coaching Institutes of Kota in Campus and University Rankings.  
Wrote articles for the Print Edition and took interviews of famous personalities.