

## Bhavy Khatri

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## EDUCATION

### Indian Institute of Technology Kanpur

*Bachelor of Science, Mathematics and Scientific Computing*  
*Second Major, Computer Science and Engineering*

2015-2020 (*Expected*)

CPI: 9.0\*

### Central Academy School, Alwar

AISSCE(CBSE)

95%

(\* - at the end of 6th semester)

## SCHOLASTIC ACHIEVE- MENTS

- Among top 3 students from Institute who got selected for Global Project Based Learning (GPBL) 2017 at **Shibaura Institute of Technology (SIT) Japan**.
- Successfully completed Summer Undergraduate Research Grant for Excellence (SURGE) 2017, 8 weeks internship program granted by Dean of Resources and Alumni, IIT Kanpur.
- Received **Academic Excellence Award** from the Institute to top 10% meritorious students of IIT Kanpur.
- Secured **All India Rank 2548** in JEE Advanced-2015 among 1,50,000 students.
- Awarded with the KVPY fellowship by Government of India, ranked 356 out of 100,000 students.

## TECHNICAL SKILLS

**Languages:** C, C++, Python, Bash, SQL, HTML, CSS, MIPS, Verilog.

**Tools:** Git,  $\text{\LaTeX}$ , R, MATLAB, Numpy, Scipy, Keras, OpenCV.

**Operating Systems:** Linux(Ubuntu), Windows.

## PROJECTS & INTERNSHIPS

### Car Parts and Damage Detection

May18-July18

@Xenon Automotive, Bangalore

- Implemented **VGG16** deep learning Image Classifier in Keras for 12 different car parts, achieving **94%** test accuracy.
- Used pre-trained ImageNet weights (Transfer Learning) along with feature extraction and fine tuning for training on smaller dataset ( 2500 Images).
- Increased dataset size to 15 folds by using **Data Augmentation**.
- Developed web app and deployed it on the server for detecting various car parts.
- State of the art **YOLOv2** in tensorflow was used for solving damage and object detection problem.
- Created a tool for annotation of Images and storing annotated coordinates to .xml file. Annotated around 3500 Images for training dataset. Results of the project can be found [here].

### Social and Religious Biases in Indian Society

May17-July17

Mentored by: Debayan Pakrashi, Dept. of Economic Sciences

- Analyzed data of 900 women in slum areas to identify effects of interaction among different groups (Religion and Caste) on their social and religious prejudices.
- Multiple Linear Regression and its estimation using Ordinary Least Square (OLS) has been used to find the association between dependent variable (y) and different independent variables.
- Results showed that working together with people from different social and religious background changes their perception. In case of both religion and caste it was getting better. Research poster and project report can be found [here]

### Prediction Analysis for Australian Airlines

Sep17-Nov17

Mentored by: Dr. Wasim Ahmad (Economics), Dr. Sharmishtha Mitra (Mathematics)

- Revenues for company are partly determined by demand from international visitors who are sensitive to currency movements.
- Found a negative correlation of Jet Kerosene (per metric tonne) price and AUD/USD which is also consistent because if AUD/USD increases, travellers would be reluctant to visit Australia and in turn the fuel price will fall due to decrease in its demand.
- Simulated 1000 paths of prices for next 12 months for both Jet Kerosene as well as AUD/USD using past 25 years data.
- Assumed bi-variate normal distribution to predict values for both random variables using random number generated between [0,1]. Github repo for the project is [here].

### New idea for fun drive centering on young people

Dec 17

Honda R&D, Global Project Based Learning @ SIT Japan

- Suggested ideas to make driving fun for young people who have been losing interest in automobiles.
- Used QFD(Quality Function Deployment) method to consider how to satisfy customers desire.
- Considered various requirement and KANDO quality to develop QFD.
- Chose solution with highest absolute importance value i.e. Automobile with communication based on Augmented Reality technology.
- Developed a business model in which one can decide to hang out with people driving near them.
- One can also collect virtual coins while driving and can avail discount using those coins at recreational spots.
- Revenue for the company will be generated from the recreational points such as movie theatre, hotels etc. as their names would be suggested to the driver as the destination hotspot .

### RELEVANT COURSES

Data Structure and Algorithms  
Probability and Statistics  
Randomised Algorithm  
Computer Organization  
Principles of Data Base Systems  
Macro Economics  
Fundamental of Computing

Machine Learning\*  
Statistical Simulation and Data Analysis\*  
Applied Stochastic Processes  
Operating Systems\*  
Computing Laboratory-I  
Financial Economics(Audit)

\* Pursuing in current semester