

# Akshit Tyagi

Junior Undergrad Electrical Engineering  
Indian Institute of Technology, Delhi

Ph. No: +918527505197

akshit.ee114@ee.iitd.ac.in

akshit\_tyagi@outlook.com

## Education

- **Indian Institute of Technology, Delhi** New Delhi, India  
*B.Tech. in Electrical Engineering, CGPA: 9.293* 2014 - 2018 (expected)
- **Delhi Public School, R.K. Puram, Std. XII** New Delhi, India  
*Graduated with a 97.0 aggregate percentage* Graduated in 2014
- **Delhi Public School, R.K. Puram, Std. X** New Delhi, India  
*CGPA: 10.0* Graduated in 2012

## Work Experience

- **Summer Engineering Intern** NVIDIA, Bengaluru, India  
*CPU Verification and Testing Team* May - July 2016
  - Worked on handling undefined opcodes for an architectural simulator. This involved handling instruction level access for the CPU and the execution of exception return. QEMU was used to emulate an ARM environment for CPU architectural testing. This was used to compare native performance with the simulator and improve upon the perf-per-watt characteristics.
- **Winter Software Engineering Intern** Dealsnprice.com, Gurgaon, India  
*Deep Learning and Image Search Team* Nov.- Dec. 2015
  - Worked on Deep Learning Algorithms involving implementation and optimization of Convolution Neural Network algorithms to optimize image search and object detection for an e-commerce website. It included working on machine learning algorithms to extract features from images and then storing it as a Bag-of-SIFT words, and then classifying it according to k-nearest neighbours.

## Projects undertaken

- **Automated Renting and Vending Machine** IIT Delhi  
*Design Innovation Summer Award (DISA) under Prof. M. Balakrishnan* May-July 2015
  - Prototyped a product which can rent out umbrellas and accept them back. Implemented image processing for detecting the change(s) in the umbrella before it was vended out. This enabled us to build a verification system to detect if any damage has been done to the product.
- **A Small Search Engine using Inverted Page Index** Data Structures(Course), IIT Delhi  
*Course Assignment* October 2015
  - Made a small Search Engine that can return a list of most relevant queries for word(s)(phrases,and,or statements can be handled) using HashTable lookup in an InvertedIndex for a set of pages. Code can be found at <https://github.com/akshittyagi/SmallSearchEngine>

- Background Detection in a Video Stream** Machine Learning(Course), IIT Delhi  
*Course Assignment February 2016*
  - Developed a program that could detect Background and Foreground pixels using the Background Subtraction technique (using Gaussian Mixture Models). OpenCV was used to handle the video file, and create two separate output files containing the Background and Foreground video streams.
- Facial Recognition using Fisher and Eigen faces** Machine Learning(Course), IIT Delhi  
*Course Assignment April 2016*
  - Worked on implementing a facial recognition applet that uses Class specific linear projection to train and classify faces from a training set. Eigenfaces method was also implemented and the results were compared between the two.

## Awards, Grants & Honours

Design & Innovation Summer Award(DISA)	IIT DELHI,2015
<i>Project Idea was selected to be completed and prototyped under the DIS Award</i>	
Institute Award for being a student in the top 7% in the first year	IIT DELHI,2014-2015
National Talent Search Examination 2010	NCERT, JULY 2010
<i>Awarded the Scholarship</i>	
KVPY Fellowship 2012-13	DST,2013
<i>Awarded the Fellowship</i>	
Indian National Chemistry Olympiad 2014	HBCSE,FEBRUARY 2014
<i>finished in top 50 students nationally</i>	
Junior Science Talent Search Examination 2011	GOVT. OF DELHI,JULY 2011
<i>Awarded the Scholarship, stood 2<sup>nd</sup> in state</i>	

## Relevant Courses Taken

Communication Engineering*	Digital Logic and Circuits	Machine Learning
Data Structure and Algorithms	Course in Analysis of Algorithms in Java	Electromagnetics
Probability and Stochastic Processes	Linear Algebra and Differential Equations	Calculus
Deep Learning*	Artificial Intelligence*	

\*Courses to be completed in the Fall Semester of 2016-17

## Designing and Programming Skills

<b>Extensive</b>	C/C++, JAVA, MATLAB, BASH(UNIX SHELL), PYTHON
<b>Intermediate</b>	JAVASCRIPT, XML, ANDROID STUDIO
<b>Basic</b>	CSS, HTML5, MATHEMATICA