HIMANSHU TOLANI
3rd yr B.Tech CSE,
Indian Institute of Technology Ropar,
Rupnagar (Punjab, INDIA) - 140001

Email-id : **2014csb1015@iitrpr.ac.in**
Mobile No.: **9646456964**
Github handle: **Tolaniht01**

ACADEMIC DETAILS

Year	Degree/Exam	Institute	CGPA/%
2014-present	B.Tech in Computer Science & Engineering	Indian Institute of Technology Ropar	8.33/10
2013	CBSE	Mahatma Hansraj Modern School	92.4%
2011	ICSE	Christ The King College	91.2%

FIELDS OF INTEREST

- Data Structures, Algorithms, Machine Learning.

TECHNICAL SKILLS

- **Languages:** C, C++, Java, Python,Perl,PHP, MySQL
  Tools: Eclipse, LaTeX, MATLAB
  Designing Tools and Softwares: HTML, CSS,Javascript,Android Studio,OpenCv.

INTERNSHIPS

- **Mathematical Simulators** *IIT Ropar*
  (Guide: Dr. C.K Narayanan) *May'16-July'16*
  - Built Mathematical simulators for processes like Gradient Descent, Singular Value Decomposition and Lagrange Multiplier and depicting the geometric interpretation of each which can be used for course like Machine Learning to be taught in fall 2016.
  - Tools used for creating the simulators were Math.js, chart.js, Plotly.js, Numeric.js.
  - The Webpages are hosted at the following hyperlink- https://pvskand.github.io/Visualizations

- **RNA Logistics** *Jun'16-Jul'16*
  - Built Android application for an upcoming startup working basically on driver ends application.
  - Used Google Maps api for navigation purposes through GPS and also worked on data received from the server.

PROJECTS

- **Detecting Distracted Vehicle Driver** *IIT Ropar*
  (Guide: Dr. C.K Narayanan) *Ongoing*
  - The aim of the project is to predict whether the driver is distracted or not given a set of images of the driver with the help of Computer Vision and Convolutional Neural Networks.
  - The data set has been extracted from State Farms Insurance Company.

- **Image Morphing** *IIT Ropar*
  (Guide: Dr. Puneet Goyal) *Oct'16*
  - Used delauney triangulation method to morph two images.
  - A very smooth transition were observed when project in GIF format .

- **K-means clustering and Dimensionality Reduction** *IIT Ropar*
  (Guide: Dr. C.K Narayanan) *Oct'16*
  - Used K-means clustering to classify the digits of the Hand written MNIST dataset.
  - Later used Principal Component Analysis to reduce the dimensions and achieving results similar to high dimensional data.

- **Naive Bayes Classifier** *IIT Ropar*
  (Guide: Dr. C.K Narayanan) *Sep'16*
  - Used Naive Based Classifer to predict whether a given email is spam or not .
  - The predictions were 90% correct.

- **Decision Trees and Forest** *IIT Ropar*
  (Guide: Dr. C.K Narayanan) *Aug'16*
  - Implemented ID3 decision tree algorithm on the Insurance Company Benchmark Dataset and obtained an accuracy of 90% .
  - Also implemented the post pruning strategy on the Decision Tree to improve the efficiency to 92% .

- Further improved the performance to 93.5% using ensembles and feature bagging concept.

- **Data Compression** *IIT Ropar*
  (Guide: Dr. C.K Narayanan) *Sep'15*
  - Implemented the compression of data using a very efficient algorithm known as Huffman Algorithm.
  - Heap based Priority queue and Hash Tables were primarily used.

RELEVANT COURSES

- **Completed Courses:** Intro to Computer and Programming, Data Structures, Digital Electronics, Computer Architecture, Discrete Mathematics, Applied Linear Algebra, System Software Laboratory, Programming and Paradigm, Fuzzy Logic,Analysis and Design of Algorithm, Machine Learning, Operating System, Image Processing.
- **Ongoing Courses:** Logic and Computability ,Artificial Intelligence, Computer Networks.

SCHOLASTIC ACHIEVEMENTS/ EXTRA CURRICULAR ACTIVITIES

- Recognized by the Dept. of Science and Technology U.P. for Obtaining Maximum Marks(100/100) in Computer Science ICSE examination.
- Co-ordinator, Coding Club , IIT Ropar,currently teaching students of sophomore year algorithms so as to improve their as well as mine competitive programming skills.
- Member of Basketball Team and participated in 50th Inter IIT Sports Meet held at IIT Bombay in 2014.
- Member, team "ENACTUS", students organisation, 2014-present, worked on projects like CLEANSHIELD AND KALPVRIKSH that aim at the betterment of the society.