

# Tushar Gupta

Indian Institute of Technology Mandi  
Computer Science and Engineering

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**RESEARCH INTERESTS** Neural Networks, Statistical Learning Theory, Reinforcement Learning

**EDUCATION**

<b>Indian Institute of Technology Mandi, India</b> B.Tech in Computer Science and Engineering Grade Point Average (GPA) of 8.10/10	<b>August 2013 - Present</b>
<b>Aishly Public School, Haryana, India</b> 12 <sup>th</sup> Standard, C.B.S.E, Percentage: 90.2	<b>2012</b>
<b>ST. Xavier School, Rajasthan, India</b> 10 <sup>th</sup> Standard, C.B.S.E, GPA: 9.6/10	<b>2010</b>

**WORKSHOPS**

**Winter School of Machine Learning 2015, Bangalore, India**  
Selected to attend (with full scholarship) Machine Learning Winter School held at Xerox Research Centre India in December 2015 themed around Theoretical Machine Learning and Inference.

**EXPERIENCE**

<b>Software Intern, Nucleus Software, Noida, UP, India</b> <ul style="list-style-type: none"><li>Automated the process of converting Spring MVC + JSP Web-framework to Spring MVC + AngularJS Web-framework.</li><li>Project reduced server load, effort and cost of engineering and decreased the bandwidth usage.</li></ul>	<b>Jun 2016 - Aug 2016</b>
<b>ML Research Intern, Xerox Research Centre, Bangalore, India</b> <ul style="list-style-type: none"><li>Research and worked on building a prediction model to solve a real world problem of predicting possible diseases a patient could be diagnosed in the future, constrained that the patient is present in hospital.</li><li>Studied performance of Machine learning algorithms such as Decision trees, random forest, boosting, neural networks, recurrent neural network.</li><li>Achieved an accuracy of 95%</li></ul>	<b>Dec 2015 - Jun 2016</b>

**PROJECTS**

<b>Segmentation and classification of Bird Images and Videos</b> <ul style="list-style-type: none"><li>Project aim to study various Segmentation Algorithms and to develop a image Segmentation technique using various Pattern Analysis technique to separate birds from the background image and then to classify the bird in different classes.</li><li>Developed a Segmentation technique using Gaussian Mixture Model and SVM.</li></ul>	<b>Sep 2016 - Present</b>
<b>Santander Customer Satisfaction, Kaggle</b> <ul style="list-style-type: none"><li>Developed a Machine Learning model for identify dissatisfied customers early in their relationship, so as to improve relations in future.</li><li>Trained a Xgboost Model considering good feature selection and got best ROC score of 0.827610.</li></ul>	<b>Mar 2016 - May 2016</b>

**Sentiment Analysis of Tweets** **May 2016 - Aug 2016**

- Developed a Sentiment Analysis Engine for studying the behaviour of the tweeter's trending topics.
- Python based Engine was developed using NLTK library ([Link](#)).

**"Nearby Hospitals" an Android Application** **Jun 2016**

- Developed an android application that provides detailed description and directions of nearby hospitals. Application saves previous checkup records and provides booking utility.
- Google Maps and Google SignIn API were integrated with the application.

**Call Rating Engine for Postpaid Telephony** **May 2016**

- Created an application that computes balance of users via rating engine, then update the subscriber's balance with accounting engine.
- Scalable application was made and tested for millions of active subscribers and hundreds of concurrent calls.

**Online Judge** **Oct 2015 - Nov 2015**

- Developed an online platform where users can submit codes and the platform provides detailed evaluation of the code in terms of time and space complexity, execution time, errors.

**SKILLS**

**Programming Languages:** C, C++, R, Python, Matlab, JavaScript  
**Machine Learning Framework:** Scikit-Learn, TensorFlow, Theano, Xgboost  
**Databases:** MySQL, SciDB, MongoDB  
**Web-Development:** HTML, CSS, Bootstrap, AngularJS  
**Tools:** Android Studio, R Studio, Tableau, Latex, Hadoop, OpenMPI, Git

**COURSEWORK**

Pattern Recognition, Artificial Intelligence, Machine Learning, Digital Image Processing, Design of Concurrent System, Operation Research, Computational Financial Modelling, Databases, Advance Data Structure and Algorithms, Operating System, Probability and Statistics, Neural Networks

**ACHIEVEMENTS**

- Silver Medalist at Inter IIT Technical Meet 2016 in Portfolio defender problem statement.
- All India rank 4th in Machine learning challenge held at Xerox research centre, India.

**POSITIONS OF  
RESPONSIBILITY**

**Academic Secretary, IIT Mandi** **Jun 2015 - Jun 2016**

- Represented students at the institute Senate Meetings.

**Co-ordinator of NSS Literary Society, IIT Mandi** **Mar 2015 - Mar 2015**

- Responsible for all the Literary events of NSS, IITMandi.

**Club President Student Editorial, ST. Xavier School** **Apr 2009 - Jan 2010**

- Chief Editorial of school magazines and newsletters.