

## EDUCATION

2015-2020	Int. MSc in Mathematics and Computing Indian Institute of Technology, Kharagpur	CGPA : 8.33
2015	Intermediate in CBSE, Central Academy, Kota	96.2 %
2013	Matriculation in ICSE, Saint Francis School, Deoghar	97.2 %

## TECHNICAL SKILLS

PROGRAMMING	Proficient in Python, C, C++ and Java Competent in Javascript, Lua, Matlab, Android and Shell Scripting
LIBRARIES / FRAMEWORKS	ML/NN: Scikit-learn, Tensorflow, Torch, OpenCV Others: Numpy, Scipy, Pandas, Matplotlib, Django, Flask
SYSTEMS / PLATFORMS	Git, Linux
MARKUP / TEMPLATING	HTML, CSS, LaTeX

## ACADEMIC PROJECTS

FEB - APR 2017	GPA Predictor using Machine Learning models and neural networks <ul style="list-style-type: none"><li>- Created an institute-level GPA predictor for a student, which would take his previous GPA's as input, and predict his GPA's in the upcoming semesters</li><li>- Used last 10 years of grades for over 50 students in each department as training data, so as to identify the difficulty level of each semester.</li><li>- Used k- Nearest Neighbour alongwith SVM to increase the acceptability of the prediction of outliers.</li></ul>	Guide: Prof. S. K. Barai
AUG 2017 Ongoing	Utilising Social Media for Disaster relief managment <ul style="list-style-type: none"><li>- Treating people as social sensors and utlizing their social intelligence at a disaster site, by extracting the tweets and facebook posts made, in relation to a particular disaster.</li><li>- Create a post disaster management system, that would show the need and avalaibility tweets on a map based interface, so as to easily connect NGOs, volunteers and the victims to appropriate places, in real time.</li><li>- Use Information Retrieval algorithms to extract only the related tweets and then apply a deep learning model to classify between the 'need' tweets and the 'availability' tweets.</li></ul>	Guide: Prof. Saptarshi Ghosh
AUG 2017 Ongoing	Sanskrit text segmentation using NLP and neural networks <ul style="list-style-type: none"><li>- Currently using seq2seq model approach for word segmentation and machine translation.</li><li>- Experimenting with LSTM, and more complex NLP algorithms and deep learning approach to achieve the task.</li></ul>	Guide: Prof. Pawan Goyal

## EXPERIENCE

MAY - AUG 2017	Developer at Google Summer of Code <ul style="list-style-type: none"><li>- Wrote a full-fledged high-level JSOC Client, using drms package as its backend, to download astronomical data from JSOC servers.</li><li>- Wrote a full test-suite to cover the drms package, using pytest and different mock testing packages.</li></ul>	SunPy under OpenAstronomy
MAY 2017	Deep Learning Intern <ul style="list-style-type: none"><li>- Was solely responsible for building a Convolutional Neural Networks model, to identify between 5 different types of graphite flakes present in grey cast iron.</li><li>- Worked on integrating automatic detection of graphite flakes in MaterialPlus and WeldCheck.</li><li>- Used both Tensorflow and Torch as independent platforms to implement the neural network problem.</li><li>- Used OpenCV algorithms for image segmentation and stitching microscopic images.</li></ul>	Dewinter Opticals, New Delhi
JAN 2017 Ongoing	Software Developer Head <ul style="list-style-type: none"><li>- Conducted Kharagpur Winter of Code (KWOC), to promote open-source development in and around campus, which brought over 900+ registrations, across more than 25 colleges.</li><li>- Worked as a full stack developer in building the website of KWOC, using Flask as backend, and Jekyll as the frontend.</li><li>- Mentored over 50 students, in projects varying in Python and Android.</li></ul>	Kharagpur Open Source Society

## TERM PAPERS

FEB 2017	Fuzzy Logic Congestion Control in TCP/IP in Diff-Serv Networks <ul style="list-style-type: none"><li>- Use Fuzzy logic approach to achieve a better Quality of Service, by handling congestion in TCP/IP networks.</li><li>- Fuzzy variables used to denote how the length of the packet queue affects the congestion, and the rate of increase of the queue length.</li><li>- Using linguistic approach to give the output whether the packet drop should be low or moderate or high.</li></ul>
APR 2017	Automatic Detection of Landforms on Mars using Neural Networks <ul style="list-style-type: none"><li>- Employs the use of Convolutional Neural Networks to discover volcanic unsettled cones and transversal aeolian ridges.</li><li>- MarsNet, consisting of 5 different networks, was used to detect the landforms of different sizes.</li><li>- Comparisons were made with results obtained from other ancient classifiers, like SVMs.</li></ul>

- Programming and Data Structures (T/L)
- Discrete Mathematics
- Design and Analysis of Algorithms (T/L)
- Probability and Statistics
- Soft Computing Tools in Engineering
- Object Oriented Software Design\* (T/L)
- Linear Algebra\*
- Computer Organisation and Architecture\*

\* Currently Studying

## PERSONAL PROJECTS

DEC 2016	<b>Scarner's Dice</b> - Made a basic android 2-player game that works on random dice throwing. The code can be found <a href="#">here</a>	Android
APR 2016	<b>Birthday Bot</b> - Built a automatic bot, that likes and comments on all your birthday wishes. - Uses selenium to automate the browser to acheive the task. The code can be found <a href="#">here</a>	Python
JAN 2013	<b>Railway Reservation Portal</b> - Built a non-GUI railway reservation portal in Java, using object-oriented approach. - Mocked the facility of booking, editing, and cancellation of tickets and allotment of the seats using most of the real life algorithms used.	Java

## OPEN SOURCE CONTRIBUTIONS

PYTHON	<b>Coala</b> - coala provides a unified command-line interface for linting and fixing all your code, regardless of the programming languages you use.
PYTHON	<b>Sunpy</b> - Sunpy is a community-developed, free and open-source solar data analysis environment for Python. - Made a number of contributions in the package, fixing a number of bugs, and writing a full wrapper for JSOC Client to download astronomical data.
PYTHON	<b>Drms</b> - Drms is a python module for accessing HMI, AIA and MDI data, obtained from Solar Dynamics Observatory. - Wrote a full test-suite for the python module, using pytest and other mock testing packages.

## POSITIONS OF RESPONSIBILITY

CURRENT	<b>Executive Head, Kharagpur Open Source Society</b> - Conducted Kharagpur Winter of Code, a program to introduce people to open-source development, which brought over 900+ registrations. - Conducted Linux-install fest in the campus, to promote use of Linux as the preferred operating system. - Conducted Python Classes and Git workshop, to teach students the process of contributing to an open-source project. - Was the full stack developer of the website of Kharagpur Winter of Code, using Flask as backend, and Jekyll as frontend.
CURRENT	<b>Web Secretary, Mathematics Colloquium, IIT Kharagpur</b> - Managing the official website of the Department of Mathematics. - Managing the development of the student portal, which gives access to all study materials and question papers related to course subjects.
CURRENT	<b>Senior Editor, Technology Literary Society, IIT Kharagpur</b> - Managing the content and design team of the society. - Writer in the English Team, and working as a senior editor for all English publications.
JUL - DEC 2015	<b>Core Team Member, Space Technology Students' Society, IIT Kharagpur</b> - Acted as Junior Coordinator in National Students' Space Challenge, India's largest space tech-fest. - Involved in conducting various space-related events and seminars in the campus.

## SCHOLASTIC ACHIEVEMENTS

CURRENT	Recipient of Innovation of Science Pursuit for Inspire Research (INSPIRE) Scholarship
2011	Secured All India Rank 2, in National Cyber Olympiad in high school
2015	Secured 99.11 percentile in JEE Advanced 2015
2015	Secured 99.33 percentile in JEE Mains 2015
2012	State-level awardee at National Children Science Congress