



RISHU RAJ



ACADEMIC DETAILS

| Year | Degree / Board | Institute | GPA / Marks(%) |
|------|--|---------------------------------------|----------------|
| --- | B.Tech and M.Tech in Mathematics & Computing | Indian Institute of Technology, Delhi | 7.75 |
| 2018 | Bihar School Intermediate Examination | Gaya College, Gaya, Bihar | 82.6 % |
| 2016 | CBSE class Xth Boards | St. Paul Public School, Tehgra, Bihar | 10 CGPA |

SCHOLASTIC ACHIEVEMENTS

- **Joint Entrance Examination (JEE) Advanced:** Secured **All India Rank 240(OB)**
- **Joint Entrance Examination (JEE) Mains:** Secured **All India Rank 137(OB)** among 1.3 million students
- **BSEB Intermediate Examination:** Secured **State Rank 5** out of 1.2 million students
- **Certificate of Appreciation:** Awarded by **The Chairman of BSEB** for excellent performance in BSEB +2 Examination
- **Rajendra Prasad Scholarship Award:** Recipient for monthly allowance for consecutive three years [2018-present]

PROJECTS

- **Meme Classification** | *Prof. Niladri Chatterjee* [Apr 2021 - May 2021]
 - Extended the pretrained model of **VGG16(ImageNet)** and trained it on a dataset of meme images to classify them in 3 classes.
 - **Preprocessed text** present in meme images and trained them on both **Logistic Regression** model and **GRU** model
 - Built an **Ensemble model** (*Logistic Regression + CNN + GRU*) and achieved **rank 14** in the course **kaggle competition**
- **Operating System Utilities** | *Prof. Ashutosh Rai* [Mar 2021 - May 2021]
 - Built a **UNIX-like-shell in C** that interactively accepts inputs from the user with custom implementation of cd, exit, & history
 - Developed a **page table simulator**, Implemented and **Compared different strategies:** OPT, FIFO, CLOCK, LRU, and RANDOM
 - Implemented two versions of **reader-writer locks** one with **reader preference** and the other with **writer preference**
- **Mulebot Enclosure Design** | *Prof. Subrat Kar* [Mar 2021 - May 2021]
 - Using **KiCad**, Designed and Built **CAD of enclosure of a mulebot** that would follow a user and can carry upto 20KG of weight
 - Acted as the **co-ordinator of the design team** consisting of 15 students and managed the work distribution for the project
- **Sentiment Analysis** | *Prof. Niladri Chatterjee* [Mar 2021 - Apr 2021]
 - Experimented with **9 ML models** and compared top results obtained with **very small text-datasets** i.e. 1000 instances per dataset
 - Obtained 83% text-accuracy in SVM model and 75% test-accuracy in transfer-learning model with Amazon-review dataset
- **Mythos Labs Website** | *Mythos labs* [Jun 2020 - Jul 2020]
 - Used **Elementor** to design and model a **static WordPress website** to display several types of contents on multiple pages
 - Acknowledged with a **Letter of Recommendation** by the CEO for quality of work, ethics and professional behavior
- **Magadh Super 30 Website** | *MS30, Non-Profit Organisation* [Jan 2019 - Apr 2019]
 - Created a **dynamic website** using **Flask** (*framework of python*) as backend and built a minimal UI using Bootstrap and CSS
 - Implemented a fully functional **login system** and custom email verification system and deployed the website on **heroku** using **git**
 - Integrated a **Face Detection model** to detect the position of the face and crop the image accordingly to set it as a profile picture
- **Triangulation of Solid Surfaces** (Prof. Subodh Kumar): [Oct, 2019 - Nov, 2019]
 - Implemented **Graph Data Structure** to store triangulation data of a 3d shape and supported multiple queries about the solid
 - Implemented the system with efficient time complexity using data-structures: **Quick Union-Find, Red-Black Trees** and **Tries**

TECHNICAL SKILLS

- **Programming Languages:**--- C, C++, Java, Python, MATLAB
- **Web Development:**----- HTML, CSS, Javascript, Flask, Wordpress
- **Operating System:**----- Windows 10, Linux (*Ubuntu 21.04*)
- **Softwares and Liabraries:**--- Keras, Numpy, Pandas, Tensorflow, FFmpeg, GIT, Gimp, Inkscape, Autodesk Inventor

EXTRA CURRICULAR ACTIVITIES

- **Online Courses**
 - [*Stanford University*]: Machine Learning
 - [*DeepLearning.ai courses*]: NN and Deep Learning, Convolutional NN, Improving Deep NN, Structuring Machine Learning Projects
- **Mentor, Magadh Super 30** [July 2018 - Present]
 - Associated with **Magadh Super 30**, run by **ex-DGP** of Bihar **Sri Abhayanand Sir**. It provides free JEE coaching to unprivileged students.
 - Mentoring students for making preparation strategies based on an individual's strength.
 - Regularly conduct doubt sessions and discuss relevant concepts on Google Meet or call, and in person during vacations
- **Dramatics Society Zanskar Hostel** [2018-2019]
 - Represented Zanskar Hostel in Interhostel **Monoact** 2018, Inter-hostel **Street-Play** 2018 and Inter-hostel **Stage-Play** 2019
- **AINA** (An Initiative for National Advancement) [2019-2020]
 - Active volunteer for weekly **teaching and mentoring program** for unprivileged students of nearby slums for their holistic development



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IIT COURSE

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COURSES DONE

Intro. To Computer Science, Calculus, Data Structures And Algorithms, Introduction To Psychology, Discrete Mathematical Struc., Differential Equations, Real And Complex Analysis, Probability & Stochastic Pro., Analysis & design Of Algorithms, Computer Architecture, Cryptography, Operating Systems, Data Mining

POSITIONS OF RESPONSIBILITY

- BSW Mentor, Mentors 2020-21 (October, 2020 - July, 2021)