



## Education

### Indian Institute of Technology, Kharagpur

Major in Bachelor of Architecture

Minor in Mathematics and Computing

CGPA: 8.08/10

Jul' 17 – Present

### Macro Vision Academy, Burhanpur

High Secondary Examination

Aggregate: 86%

Apr' 15 – May' 17

### Ram Shanti Vidya Mandir, Pandhurna

Secondary Examination

CGPA: 10/10

Apr' 14 – Mar' 15

## Research Interests

Machine Learning • Computer Vision • Natural Language Processing

## Research Experience

### Centre for Artificial Intelligence, IIT Kharagpur

Aug' 9 – Present

Advisor: [Prof. Sudeshna Sarkar](#)

Topic: **Context based question answering NLP model**

- Developed a **bidirectional auto encoder-based model** which uses the information extracted from context with out of reference knowledge to get the softmax probabilities over all the possible answers to a question
- Extracted the edges based relations from commonsense corporas like ConceptNet and NELL
- Working on making commonsense inclusive word vectors using the relations extracted like ConceptNet Numberbatch

Research Areas: Natural Language Processing, Machine Learning

## Open Source Contribution

### JuliaText

Dec' 19 – Present

Package Development and Bugfixes

[\[Github\]](#)

- Implemented ALBERT (A Lite Bidirectional Encoder Representation from Transformers) model from scratch in Julia
- Released Checkpoints for Pretrained weights in BSON format as desired by Julia and provide APIs for Conversion
- Contributed Paragraph embedding APIs and improvised code base in Embedding.jl and reduced code coverage by 60%
- Created and Documented GoogleDrive.jl (Julia's Official Package) to automate google-drive Download in Julia

## Projects

### Kinship Relationship Prediction

May' 19 – Jul' 19

Kaggle Challenge

[\[Github\]](#)

Topic: **Predicting if two persons share kinship relationship based solely on the images of their faces**

- Developed a **Siamese convolutional neural network**-based model for feature extraction and a dense layer on top of it for binary classification
- Tuned the hyperparameters to achieve more than 85% accuracy on the Face in the Wild dataset

Frameworks/Libraries Used: TensorFlow, Keras, Pandas

### Energy Efficient Design, Virtual Assistant

Feb' 19 – Apr' 19

Term Project

Advisor: [Prof. Shankha Pratim Bhattacharya](#)

[\[Github\]](#)

Topic: **Task Manager: Term project for the course**

- Developed a 3D model of **Residential Complex for Visiting Researchers** within REVIT and Lumion is used for rendering
- Performed Energy Analysis on the building design through all stages, from the earliest conceptual phase through detailed design, to ensure constant working towards the most energy-efficient building possible.
- Wind Analysis was performed in Autodesk Flow Design and REVIT Plugins were used for lighting and Energy analysis

## Skills

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<b>Languages</b>	Python • C/C++ • Java • JavaScript
<b>Libraries/Frameworks</b>	TensorFlow • PyTorch • OpenCV • Keras
<b>Web/Development</b>	HTML • CSS • Django • Android
<b>Tools</b>	Git • Shell • Unix • Markdown • Android Studio • Photoshop • Revit

## Relevant Courses

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CS231n	NLP(Coursera)	Deep Learning Specialization	Machine Learning
Probability and Statistics	Discrete Mathematics	Design and Analysis Of Algorithms(L)	Linear Algebra*
Economics	Programming and Data Structure (L)	Climatology	Energy Efficient Design

(\*marked courses are still ongoing, 'L' marked course have a laboratory component with them)

## Awards and Achievements

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**Joint Entrance Examination (JEE) – Advanced** 2017  
Among top **0.12%** of the **0.2 million** candidates

**Joint Entrance Examination (JEE) – Mains** 2017  
Among top **0.07%** of the **1.2 million** candidates

## Positions of Responsibility

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**Department Representative** Sep'18 – present  
*Career Development Centre, IIT Kharagpur*  
•Part of a team of 30 student selected by panel of Dean and professors for planning and execution of the placement of **3000+** student.  
•Acted as a linkage between the administration, students and company ensuring better **career possibilities and recruitment process.**

**ShARE, IIT Kharagpur** Jul'17 – Jun'19  
*Senior Member*  
•Sharing Analysis on Regional Economies (ShARE) is a multicultural, non-profit organization for students that strives to better understand the complexities of socio-economic and business issues.  
•Member of a Global Student Think Tank with 620+ members from over 30 universities across 12 countries. Delegated to Business Strategy network responsible for making propositions and tracking business globally.

**Advertisement Design (Ad-Design)** Sep'18 – Oct'18  
*Vice Caption, Azad Hall of Residence*  
•Leading a 15 members team in the Ad- design competition, Technology General Championship, IIT Kharagpur. Contributed in more than 7 deliverables out of 10.

## Extra-Curricular Activities

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**National Service Scheme, Ministry of Youth Affairs and Sports** Jul'17 – Apr'19  
*Volunteer Member*  
I organized multiple book distribution, cloth distribution campaigns to help the people of Poriapara village, Kharagpur. I also participated in the data collection for the water and sanitation facilities survey in the nearby villages of Kharagpur.

**Sports General Championship, IIT Kharagpur** Jan'18 – Feb'19  
*Volleyball Player*  
Secured third position among more than 20 teams in both 2018 and 2019 Sports General Championship, IIT Kharagpur.