

# Siba Smarak Panigrahi

+91 9439440550 • sibasmarak.p@gmail.com  
sibasmarak.github.io

## Education

### B.Tech in Computer Science and Engineering

Indian Institute of Technology, Kharagpur, India

Department Rank 2 amongst 121 students

2018–Present

GPA: 9.73/10

### All India Senior School Certificate Examination (AISSCE)

Kendriya Vidyalaya Sangathan (KVS), India

2018

98.6%

Secured AIR 3, Rank 1 in Bhubaneswar Region. Among the top 0.1% of the 1.16 million candidate.

## Research Interests

Machine Learning, Deep Learning, Natural Language Processing, Algorithms

## Research Experiences

### Emotion Recognition using EEG Signals [Code]

Bennett University, India

Research Intern | Supervisor: (PhD Scholar) Divya Acharya

Jul 2020–Aug 2020

Carried literature reviews of recent papers to learn basics of Genetic Programming, and Multi-Task Cascaded Networks. Designed CNN and LSTM architectures to obtain **87.5%** and **88.6%** mean accuracy for classification of EEG signals as valence, arousal, liking and domain emotions.

### COVID-19 detection using Chest X-rays [Code]

Effat University, Saudi Arabia

Summer Research Intern | Guide: Prof. Abdulhamit Subasi

Jun 2020–Aug 2020

Designed architectures of 2 and 3 layered CNNs to obtain accuracy around **95%** for classification of X-Ray images into Normal, COVID-19 or Pneumonia. Combined Machine Learning algorithms and ImageNet pre-trained architectures to enhance the above accuracy to **96.5%**.

### Resource Allocation Problems

IISc Bangalore, India

Summer Research Intern | Guide: Prof. Arindam Khan

May 2020–Aug 2020

Carried literature reviews of 7 papers and 1 book to understand tools such as LP-relaxation, rounding techniques, and primal-dual method. Improved the existing approximation factor for Round-UFP from 24 to 16, and Uniform Round-UFP (constant edge capacity throughout) from 3 to 2. Devised algorithms to obtain approximation factor of 2 for Uniform Round-SAP and approximation factor of 16 for Round-SAP.

## Key Projects

### Write Your Thoughts [Code]

IIT Kharagpur

Software Engineering Lab Term Project | Supervisor: Prof. Sudip Misra

May 2020

Created a web platform on Django framework for literary enthusiasts' to share their stories, poems, and thoughts. Incorporated commenting and rating on a work; allowed subscribing and ranking the authors.

## Student CGPA [Code]

IIT Kharagpur

*Self-designed project*

Mar 2020

Trained Machine Learning algorithms on 1185 students' data to predict CGPA at the end of semester III, using previous semesters' CGPA. Produced promising results with a low mean test error of 0.02 and test accuracy of 94.8% on a size of 132 students.

## EarthQPlot [Code]

University of California San Diego

*Object Oriented Programming in Java - Coursera*

Sep 2019

Created a GUI Applet to show the locations of Earthquakes around the world utilising data from RSS Feed. Enhanced features to distinguish between Land and Ocean earthquake, and show relevant statistical results.

## Academic Achievements

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- Qualified campus round in **Smart India Hackathon, Software Edition**, and bagged position amongst top 5 teams of the institute (2020)
- Awarded Gold Medal for securing **1st** position in Open IIT Maths Olympiad (2019)
- Awarded with **Technology Alumni Association (Delhi Chapter) Award**, highest CGPA at end of semester II amongst all B.Tech/Dual Degree students (2019)
- Secured **2nd** rank in JBNSTS (Jagadis Bose National Science Talent Search) Examination (2018)
- Secured **All India Rank 828** in the KVPY examination (2017)
- Invited as **Guest of Hon'ble Prime Minister of India** to witness Republic Day Parade from Prime Minister's Box for excellent performance in AISSE (2017)
- Ranked **6th** in India and **1st** in region in KVS-JMO (Junior Mathematical Olympiad) (2016)
- Ranked **2nd** in Odisha state RMO (Region Mathematical Olympiad) (2016)
- Selected as **Exchange Student** under Sakura Exchange Program in Science, Japan Science and Technology Agency (2016)

## Relevant Coursework

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**Mathematics** - Linear Algebra, Calculus, Probability and Statistics

**Computer Science** - Programming and Data Structures, Algorithms - I, Discrete Structures, Software Engineering, Formal Language and Automata Theory, Switching Circuits and Logic Design, Signals and Networks, Introduction to Electronics

**Ongoing semester** - Machine Learning, Compilers, Algorithms - II, Computer Architecture

**Online** - Applied Data Science Module (Unit I and II), World Quant University • Machine Learning, Coursera • Deep Learning, deeplearning.ai

## Activities and Leadership

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### Mathematics Mentor

*MissionEd: Revolutionising Education*

Mentored students from various parts of India for Mathematics essential for IIT-JEE examination. MissionEd is an Indian Ed-Tech start-up to enhance the quality of the education for the students.

### Team Leader (Geometry and Topology Team)

IIT Kharagpur

*The Theoretical Mathematics Reading Group (TMRG)*

Taught and attended sessions on Basic Topology, Graph Algorithms, Number Theory and Matrix Algebra. The TMRG is a reading group under UG Students' Council, IIT Kharagpur to develop interest amongst students towards research in Computer Science and Mathematics.

## Web Development and Content Head

IIT Kharagpur

### *Institute Wellness Group (IWG)*

Guided web development team to design a website to spread awareness about our activities, and mental health. Planned refresher events, awareness drives and Gatekeeper training programs. IWG is a friendly neighborhood wellness body of the campus, responsible for organising events that helps to aware students about mental health issues and methods to combat them.

## Skills

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- **Coding** - Python, C, Java,  $\text{\LaTeX}$ , Octave
- **Other** - Streamlit, Git, Keras, Tensorflow, NLTK, Numpy, Matplotlib, Scikit-learn, Pandas
- **Web Devt.** - Django, HTML, CSS, Bootstrap, PostgreSQL

## References

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Upto 3 references available on request.