

# Siba Smarak Panigrahi

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## Education

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### 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 candidates.

## Research Interests

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Deep Learning, Human-Computer Interaction, Automated Machine Learning (AutoML)

## Research Experience

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### Emotion Recognition using EEG Signals [1]

Bennett University, India

Research Intern | Supervisor: Prof. Arpit Bhardwaj & 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 **87.72%** and **88.6%** mean accuracy for classification of EEG signals as valence, arousal, liking, and domain emotions.

### COVID-19 detection using Chest X-rays

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 more than **96.5%**.

## Key Projects

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### Write Your Thoughts

IIT Kharagpur

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

May 2020

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

### Student CGPA

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

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 utilizing 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** - Machine Learning, Algorithms - I & II, Discrete Structures, Formal Language and Automata Theory, Switching Circuits and Logic Design, Signals and Networks, Compilers, Computer Organization and Architecture, Software Engineering

**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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### Data Science & Machine Learning Mentor

IIT Kharagpur

*Kharagpur Data Analytics Group (KDAG)*

Organized Data Science and ML workshops for students. Guided mentees with relevant resources. The KDAG is a group of students enthusiastic about Data Science and Machine Learning, along with its applications.

### Team Leader (Geometry and Topology Team)

IIT Kharagpur

*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, month-long awareness drives, and Gatekeeper training programs. IWG is a friendly neighborhood wellness body of the campus, responsible for organizing events that helps to aware students about mental health issues and methods to combat them.

## Skills

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- **Coding** - Python, C, Java, L<sup>A</sup>T<sub>E</sub>X, Octave, Verilog, MIPS
- **Other** - Keras, Tensorflow, PyTorch, Streamlit, Git, Numpy, Matplotlib, Scikit-learn, Pandas
- **Web Devt.** - Django, HTML, CSS, Bootstrap, PostgreSQL

## References

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Upto 3 references available on request.

## Conferences

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1. Paper titled "Multi-Class Emotion Classification Using EEG Signals" has been accepted in 10th International Advance Computing Conference (IACC), 5th-6th Dec. 2020, Panaji, Goa, India and for publication in the book series, Communications in Computer and Information Science (CCIS), Springer.