Siba Smarak Panigrahi

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Education

B.Tech in Computer Science and Engineering   **2018–Present**
Indian Institute of Technology, Kharagpur, India   *GPA: 9.73/10*
Department Rank **2** amongst 121 students

All India Senior School Certificate Examination (AISSCE)   **2018**
Kendriya Vidyalaya Sangathan (KVS), India   *98.6%*
Secured AIR 3, Rank 1 in Bhubaneswar Region. Among the top 0.1% of the 1.16 million candidates.

Research Interests

Machine Learning, Deep Learning, Computer Vision

Research Experience

Emotion Recognition using EEG Signals [1]   **Bennett University, India**
Research Intern | Supervisor: (Ph.D. 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 **87.72%** 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%**.

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 an approximation factor of 2 for Uniform Round-SAP and approximation factor of 16 for Round-SAP.

Key Projects

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

- 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

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

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 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 organizing events that helps to aware students about mental health issues and methods to combat them.

Skills

- **Coding** - Python, C, Java, LaTeX, Octave
- **Other** - Keras, Tensorflow, PyTorch, Streamlit, Git, Numpy, Matplotlib, Scikit-learn, Pandas
- **Web Devt.** - Django, HTML, CSS, Bootstrap, PostgreSQL

References

Upto 3 references available on request.

Conferences

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.