Siba Smarak Panigrahi

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Education

B.Tech in Computer Science and Engineering   **2018–Present**

Indian Institute of Technology, Kharagpur, India   *GPA: 9.78/10*

Department Rank **1** amongst 121 students. Institute Rank **2** amongst 1362 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

Deep Learning, Reinforcement Learning, Automated Machine Learning (AutoML)

Research Experience

Study on Bihar Elections   **MIT, USA**

Data Analytics Intern | Supervisors: Prof. Kiran Garimella (IDSS, MIT)

Prof. Aaditya Dar (ISB) & Vasundhara Sirnate (The Polis Project)   *Dec 2020 – Current*

Designed a framework to enhance and simplify the study of Facebook posts during elections. Analyzed trends of post reacts, influence of different FB page categories on the election trends and results. Proposed pipeline to analyze the trending topics of discussion for a related group of posts

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

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 to and ranking of authors. Received appreciation from Teaching Assistant for the project.

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 - 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

Data Science & Machine Learning Mentor   **IIT Kharagpur**
Kharagpur Data Analytics Group (KDAG)
Organized research paper-reading sessions for students of IIT Kharagpur. Conducted Data Science and ML workshop for more than 600 registered students. 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. Planned refresher events, month-long mental-health 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, Verilog, MIPS
- **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.