Siba Smarak Panigrahi

+91 9439440550 • sibasmarak.p@iitkgp.ac.in
sibasmarak.github.io

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.

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, Computer Vision, Automated Machine Learning (AutoML)

Research Experience

Study of Facebook posts during Elections [Code] **MIT, USA**
Data Analytics Intern | Supervisors: Dr. Kiran Garimella (IDSS, MIT)
Prof. Aaditya Dar (ISB) & Vasundhara Sirnate (The Polis Project) *Dec 2020*
Designed a complete framework to enhance and simplify the study of Facebook posts during elections. Analyzed distribution of page characteristics and post reactions, released by different FB pages, and their correlation with election results. Trained simple pipeline(s) to assign a political party to a post. Performed topic modeling to provide an overall sense to posts released by various political parties.

Emotion Recognition using EEG Signals [1] [Code] **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 dominance 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 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 score 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, 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
Current - Deep Learning, Natural Language Processing, Computer Networks, Operating System

Activities and Leadership

Team Head **IIT Kharagpur**

Kharagpur Data Analytics Group (KDAG)

Organized research paper-reading sessions for students of IIT Kharagpur [Link]. 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, PyTorch, streamlit, gensim, Git, numpy, matplotlib, scikit-learn, pandas
- **Web Devt.** - Django, HTML, CSS, Bootstrap, PostgreSQL

References

Upto 3 references available on request.

Conferences

1. Acharya D. et al. (2021) Multi-class Emotion Classification Using EEG Signals. In: Garg D., Wong K., Sarangapani J., Gupta S.K. (eds) Advanced Computing. IACC 2020. Communications in Computer and Information Science, vol 1367. Springer, Singapore. https://doi.org/10.1007/978-981-16-0401-0_38.