Saranga Kingkor Mahanta

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Education

National Institute of Technology Silchar, India *CGPA (absolute): 8.32*
BACHELOR OF TECHNOLOGY IN ELECTRONICS AND COMMUNICATION ENGINEERING *Aug. 2018 - June. 2022 (Expected)*

Army Public School Narangi, Guwahati *Percentage: 92.6%*
INTERMEDIATE SCIENCE (PHYSICS, CHEMISTRY, MATHEMATICS, COMPUTER SCIENCE) *2016 - 2018*

Sarala Birla Gyan Jyoti, Amingaon, Guwahati *CGPA: 10%*
MATRICULATION *2004 - 2016*

Experience

The Sparks Foundation *Singapore*
COMPUTER VISION INTERN *Dec. 2020 - Jan. 2021*

- Fine-tuned **VGG19** to build a real-time face mask detector
- Exploited **K-Means clustering** to identify major colours in an image and search images having particular colour via colour name

Utkarshini Edutech *Bengaluru, India*
MACHINE LEARNING RESEARCH INTERN *Dec. 2019 - Feb. 2020*

- Conducted a comparative study on Convolutional Neural Networks and various architectures: **LeNet-5**, **AlexNet**, **VGG-16**, **GoogLeNet**/**Inception-v1-4**, **ResNet-50** , **Xception**, **Inception-ResNet-V2**
- Formulated pellucid documentations

Key Projects

COVID-19 Diagnosis from Cough Acoustics *Mar. 2021*
DiCOVA 2021 CHALLENGE *Link to project*

- Used **Audiomentations** & **ConvNet** to efficiently classify cough sounds belonging to Coronavirus positive or negative subjects
- Claimed the top position of the DiCOVA 2021 Challenge leaderboard

Multi-class Musical Instrument Recognition *Dec. 2020 - Jan. 2021*
GUIDE: DR. PARTHA PAKRAY *Link to project*

- Extracted Mel-Frequency Cepstral Coefficients from monophonic audio clips
- Architectured a **deep neural network** and achieved a new state-of-the-art accuracy on the London Philharmonic Orchestra Datasest
- Used refocusing mechanisms to further refine the results to achieve state-of-the-art results.

Topic Extraction and Modelling from Online Chats *Aug. 2020 - Oct. 2020*
GUIDE: DR. PARTHA PAKRAY *Link to project*

- Implemented **Latent Dirichlet Allocation** to cluster topics in text dialogues
- Locally deployed a **WordCloud** generating web-app of uploaded Whatsapp Chat text file using **Flask**

Spam, Random Text and Abusive Words Classifier *July 2020 - Aug. 2020*
SMART INDIA HACKATHON 2020 *Link to project*

- Built **Spam Classifier** using **Multinomial Naive Bayes** algorithm
- Performed additional hardcoding to detect random gibberish texts and selected abusive words
- Deployed on the Web using **Flask**
- Incorporated classifier with main website presented in SIH-2020 Grand Finale

Real-time Facial Expression Recognition *May 2020*

SELF MINI-PROJECT *Link to project*

- Architectured a **CNN** to fairly classify among five emotions- Happy, Sad, Neutral, Angry and Surprise
- Implemented in real-time through the webcam using **OpenCV**

Publications

"COVID-19 Diagnosis from Cough Acousitcs and ConvNets"

Saranga Kingkor Mahanta Shubham Jain, Darsh Kaushik, Koushik Guha
Paper under review at Interspeech 2021

"Deep Neural Network for Musical Instrument Recognition using MFCCs"

Saranga Kingkor Mahanta Abdullah Khilji, Partha Pakray
5th International Conference on Advances in Computing in Data Sciences (ICACDS 2021)

Positions of Responsibility

Machine Learning Club, NIT Silchar *NIT Silchar*

SENIOR CORE MEMBER *Sep. 2019 - Present*

- Club Objective- Providing mentorship to ML enthusiasts and develop the ML/DL culture in college
- Club activities include taking classes, hosting quizzes, interviews and ML hackathons
- Taught Machine Learning fundamentals to juniors and beginners

Achievements

2021	**Bagged 1st position in the DiCOVA 2021 Challenge leaderboard** for the Track 1 problem statement- COVID-19 diagnosis from cough sound recordings	*DiCOVA 2021 Challenge*
2020	**Finalist in the National Crystal Ball 2020 Hackathon** for the problem statement- prediction of delivery time of restaurants	*Blue Yonder*
2020	**Grand Finalist in Smart India Hackathon - 2020, organized by MHRD, Government of India.** Built and incorporated with the main website a modified spam classifier, a time series forecasting instance using the SARIMA model, and a chatbot using Dialogflow	*Sage University, Indore*
2020	**Organized Electro-hunt in Sprectrum 5.0** , the technical weekend of Electronics and Communication Society, NIT Silchar	*NIT Silchar*
2018	**Winners of Robo-Soccer, Tecnoesis** , the annual technical festival of NIT Silchar	*NIT Silchar*

Technical Strengths

Computer Languages	C, C++, Python, HTML, CSS, MySQL
Software and Tools	Git, LaTeX, Adobe Photoshop
Libraries & Frameworks	Keras, PyTorch, Flask, NLTK, OpenCV, Librosa, Scikit-learn, Pandas, NumPy, Matplotlib
Domains	Computer Vision, NLP, Speech Processing, Adversarial Machine Learning, DSA

Courses & Certifications

- 30 Days of Google Cloud Platform, *October 2020*

- Neural Networks and Deep Learning | *Deeplearning.ai*

- Introduction to Tensorflow for AI, ML and DL | *Deeplearning.ai*

- Machine Learning with Python | *IBM Badge*

- Machine Learning | *Andrew Ng, Stanford University*