

Soumyabroto Banerjee

Analytics & Insights, Tata Consultancy Services (Grade : Systems Engineer)

Programming

Python, Qlik, Tableau,
Java, C, Arduino,
Vivado(Verilog),
Cadence Virtuoso



Skills

DEEP LEARNING, MACHINE LEARNING, COMPUTER VISION, IMAGE PROCESSING,
NLP, IOT, DRONE MAKING, ROBOTICS, VLSI

Education

Secondary Education (2014) —————> **Don Bosco School Park Circus**
Percentage obtained : 91.8

Higher Secondary Education (2016) —————> **Don Bosco School Park Circus**
Percentage obtained : 94.5

WBJEE RANK = 1684

University (2016-20) —————> **Institute of Radio Physics and Electronics(B.Tech)**
Electronics and Communication, University of Calcutta

SGPA(s):-

1st SEM: 8.71
2nd SEM: 9.25
3rd SEM: 8.29
4th SEM: 8.57
5th SEM: 9.60
6th SEM: 9.74
7th SEM: 9.42
8th SEM: 9.71

CGPA = 9.12

Experience

July 2018	TATA STEEL PLANT, TATANAGAR <i>PLC Programming on Siemens and Rockwell</i>	Internship
June 2018	EASTERN RAILWAY <i>Networking and Protocol Management</i>	Internship
June 2019	Tata Steel Marketing and Sales <i>Cash to invoice prediction and Collection Insights using ML</i>	Internship
June 2019	Jadavpur University <i>Design and implementation of improved algorithms for Clustering and Outlier Detection in Keyword Spotting</i>	Research Internship
April 2020-August 2020	adben industries pvt. ltd <i>Face Recognition Database implemented with tensorflow and using Anti-Spoofing detection. It is a part of COVID-19 remedy project to popularise contactless spotting. It is implemented in Nvidia, Jetson Nano.</i>	Freelancer
August 2020	aQb Solutions <i>Face Emotion Recognition Database implemented with tensorflow and using FECNet. It is a part of an American Project of Real Time Recommendation System on Malls in America.</i>	Freelancer

Certified Courses

Convolutional Neural Networks	Coursera
Sequences, Time Series and Prediction	Coursera
IBM Introduction to Data Science	Coursera
Structuring Machine Learning Projects	Coursera
Embedded Systems Design	NPTEL
OpenCV	UDEMY
Neural Networks and Deep Learning	Coursera
Improving Deep Neural Networks: Hyperparameter tuning, Regularization and Optimization	Coursera
Introduction to Machine Learning	NPTEL
C Programming for Embedded Applications	LinkedIn
OpenCV for Python Developers	LinkedIn
How Google does Machine Learning	Google Cloud(Coursera)
Learning Python GUI Programming	LinkedIn

Projects Done

Drone Making

Participated in Cognizance(TECH FEST, IIT ROORKEE)

Prototyping a Flight Controller using Arduino UNO. It is a low cost Arduino Uno based Flight controller. The basic response time of Arduino was tweaked to be very low. Stability was achieved by using a PID equation whose coefficients were found by numerous experiments.

Earthquake Emulator

Part of SMDP cluster Project, GOVT. of INDIA

Modelling an Earthquake Emulator using Arduino Uno to fetch data and Plot in Excel using a CSV file and writing a Macro to capture the incoming data from the port and the specific baud rate.

Arduino Based Robot Car without Remote

Participated in Kshitij'17(TECH FEST,IIT Kharagpur)

Arduino Modelled hardwired Robot car

M.O.C.H.A.(Man Operated Car Having AI)

Participated in STEX'18 and was declared Second

DTMF based LPG detector modelled using Deep Neural Nets, dataset:AlexNet. Methodology : TL

Analyze the Distributor Capability Index of Tata Tiscon q4 FY19

There were three tasks mainly,
prediction of High delay credit customer, prediction of Collection of Credit Customer for the next 5 days and the prediction of net Cash collection for the next 5 days from a specific date
The Models used were many, mainly Random Forest, Knn, ARIMA, and three classifiers were boosted and voted to give final prediction, the dataset used was a Panel Data provided by my guide.

The accuracy was above 0.95.

Sales Prediction for Tata Shaktee

The task at hand was to predict the Sales outcome on a Distributor-Product Code level to better estimate the available cash to invest in other Arenas. Currently ongoing. Presently working on LSTM and other ways to enhance the Predictor.

Novel Clustering Algorithm

This Project is under the supervision of Dr. Ram Sarkar of JU.

The aim is to build a robust Clustering Algorithm in order to mitigate the hard clustering shapes problems. We propose an Algorithm based on previous Cluster Information without considering LOF.

The Primary advantage is to build a Robust Algorithm the fuzzy outputs of an ensemble of Hard Clustering Algorithms. The Ensemble model is being tested on Standard datasets - Spiral, Atmosphere, etc. The results are promising.

Awaits Publication

Bio Medical Image Classification

This Project is under the Supervision of Dr. Arpita Das of CU. Designed a Brain Tumour Dataset by Collecting, Cleaning Images from Harvard.edu and used Transfer Learning to Classify it into 2 classes, positive and negative. ROC achieved = 0.92

We have built a Custom CNN Classifier specialised in brain tumour Detection. It achieves a ROC greater and better than obtained by Transfer Learning.

Published AMPHE 2020 - Best Paper Award

STYLEGAN v1

Implementation of StyleGAN using TF2.0 completely based on Google Cloud. [https://github.com/SOUMYABROTOBANERJEE/StyleGAN_{TF2}](https://github.com/SOUMYABROTOBANERJEE/StyleGAN_TF2)

Face Recognition

This Product involves a Robust Face Recognition system immune to Spoofing attacks and works in a real-time environment to enable contactless environment.

Also it can detect with MASK ON.

It is implemented in NVIDIA Jetson Nano.

DL Developer Adben

Facial Emotion Recognition

Robust Facial Expression Detector built on two approaches -
Approach 1: Static CNN based EMotion Detection - Built on FaceNet using FECNet (Siamese) and AffectNet (Static ResNeXt) Architectures - Performs well above 0.65 in Accuracy
Approach 2: Action Units Based - Sequential CNN RNN Based Approach and Division of Facial Features for Sequential Information. Trained and Tested on Datasets like CASIA, Affectiva unlike usual Testing on Smaller Datasets like CK+. Performs above 0.7 in Accuracy

DL Developer aQb Solutions

Big 5 Personality Trait Detection

Trained and Tested on ChaLearn Dataset - Big 5.
ChaLearn Architecture proposed was used just for Video Based CNN Network. For Audio - NLP Based Classifier Trained on LSTM was used to mitigate the problem of local language and Emotion Dependency. NLP Trained for MBTI for Testing out Co Dependency with Big 5.
Tested and Tried with Psychologists - Achieves an accuracy of 0.96 in
Production for Video and 0.65 for Big 5 and MBTI classes in Audio - NLP
DL Developer aQb Solutions

RAIN

Trained on Rasa - Custom Coded to suit Business Need. Chatbot with Visualisation Tools integrated with Tableau, Redshift, Redis, Teradat, Denodo, SF with a capability to show case its own Insights and a tool box to play around.
Currently Working - Tata Consultancy Services

MD Prisma

Qlik Sense Developer for MD Prisma in JnJ
Currently Working - Tata Consultancy Services

Tic Tac Toe

Tic Tac Toe Game build on Minimax algo with JS. Site :
<https://soumyabrotobanerjee.github.io/tttoe.github.io/>
Personal project

Bookmarker

Bookmarker app with good old css and js.
Site : <https://soumyabrotobanerjee.github.io/bookmark.github.io/bookmarker/>
Personal project

Painter.io

Painting app with p5.JS. Site: <https://editor.p5js.org/soumyabroto.banerjee@gmail.com/full/rk4XSoj-4>
Personal project

Other Activities

TATA Millenium Scholarship Receptient

Member of IEEE

Electron Devices Society

Participated in Manthan

India's Largest street Theatre Festival

Participated in India's largest Campus theatre festival

About

I am a hardworking determined individual who tries to know and learn new things everyday. Once I find something interesting I go out of my way to know about it. I may not know a few things but I definitely want to know about them and as I have been taking up responsibilities since High School where I was elected as the Treasurer of the Media and Cultural Group in our school. I have had a knack for Science and used to participate in the school Science Competitions where I managed to get 2 certifications.

I also take keen interest in Drama and Script Writing, I have written, directed and acted in quite a few dramas, performed at various places in Kolkata. I also managed to act in a short film, Asamapto, which was selected in a couple of Film Festivals abroad.

Due to my hard working nature and persistence in solving problems and also my desire to know things, I believe I can help towards the growth of the company and as Einstein said,

"It's not that I'm so smart, it's just that I stay with problems longer."

Contact Info

Mobile:(+91)94775-55030

Landline:(033)2352-4124

Mail:soumyabroto.banerjee@gmail.com

LinkedIn:Soumyabroto Banerjee(<https://www.linkedin.com/in/soumyabroto-banerjee-537158159>)

Github: SOUMYABROTOBANERJEE

Thank You ----- CV written in Latex , Find it here : [soumyabrotobanerjee.github.io](https://github.com/soumyabroto)