Soumya Dutta

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EDUCATION

IISC BANGALORE
Doctor of Philosophy
Electrical Engineering
Feb 2021-Current

IIT BOMBAY
Master of Technology
Control and Computing, EE
CPI:9.41
July 2018

IIEST SHIBPUR
Bachelor of Engineering
Electrical Engineering
CPI:8.99
June 2015

CALCUTTA BOYS' SCHOOL
Grad. May 2011

LINKS

Github:// **soumyadutta**
LinkedIn:// **soumyadutta**
Kaggle:// **soumyadutta**

COURSEWORK

PHD
Advanced Deep Learning(ongoing)
Optimization for Data Science(ongoing)
Digital Signal Processing(ongoing)
Stochastic Models(ongoing)
Machine Learning for Signal Processing
Detection and Estimation theory
Data Structures and Algorithms

M.TECH
Advanced Machine Learning
Foundations of Machine Learning
Software Development Techniques
Applied Linear Algebra
Statistical Signal Processing
Optimization Models

SKILLS

PROGRAMMING
Python • C++ • Matlab • LaTeX

MACHINE LEARNING
Tensorflow • PyTorch • Scikit-Learn
Keras

CERTIFICATIONS

- Neural Networks & Deep Learning
- Improving Deep Neural Networks

EXPERIENCE

IBM | Cognitive Data Scientist
Jul 2018 - Feb 2021 | Bangalore, KA

- Worked on a **SVM Classifier** for email intent classification with a **precision of 76%** and **recall of 91%**
- Worked on a **Virtual Makeup Try-On** system with lips and hair segmentation followed by color transfer from example lipstick and hair-dye patches to lips and hair respectively. The color transfer was done by **matching the distribution** of the source and target.

IIT BOMBAY | Research Assistant
Jul 2015 - Jun 2018 | Mumbai, MH

- Developed a **MILP** for solving the Timetabling Problem for any railway network
- Generated a fully-automated timetable for the **Mumbai Trans-Harbour Network** (**Media Coverage**)

PROJECTS

MULTIMODAL SENTIMENT ANALYSIS | IISC Bangalore
May 2021- June 2021| Github Link| TEAM SIZE: 2

- Trained a **Transformer** model to detect sentiment from videos of IEMOCAP database
- The text features were extracted from a **BERT** based sentiment classifier
- The **accuracy** achieved was 77.8%

GOOGLE QUEST QA LABELING | Kaggle
Dec 2019 – Feb 2020| Github Link| TEAM SIZE: 2

- A **BERT** model for predicting scores for **30 classes based on QA pair** was trained
- Achieved a rank of **72 out of 1571 teams** with a **Spearman's Correlation Coefficient score of 0.39884**

LOITERING DETECTION | IBM
Sep 2020

- Detected human beings in a video by using a **YOLOv5m network pre-trained on COCO dataset**
- This was used along with a **tracking algorithm (SORT)** to raise an alert if a person was loitering in an area

CAPTION TO IMAGE SYNTHESIS | IIT Bombay
Feb 2018 – Apr 2018 | Github Link | TEAM SIZE: 4

- **Skip Thought Vectors** used for sentence encoding
- **DCGAN** architecture trained with ideas borrowed from **Matching Aware GAN** and **Reparameterisation Trick** on **CUBS** and **MS-COCO** dataset

SCHOLASTIC ACHIEVEMENTS

2018	1st/18	Control & Computing (IIT Bombay)
2015	418th/1.25L	Graduate Aptitide Test in Engineering (EE)
2011	231st/1.1L	West Bengal Joint Entrance Examination
2011	3rd/60	Excellence in Science in ISC

PUBLICATION

S.Dutta, N.Rangaraj, M.N.Belur, S.Dangayach and K.N.Singh, "**Construction of periodic timetables on a suburban rail network-case study from Mumbai**", Proceedings of the 7th International Conference on Railway Operations Modelling and Analysis, Lille, April 2017