AMOGH MANOJ JOSHI

3rd Year ECE Undergraduate

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EDUCATION

B.E in Electronics and Telecommunication Engineering

University of Mumbai

July 2018 – Present CGPA - 7.9/10.0

EXPERIENCE

Malaviya National Institute of Technology Jaipur
Remote Research Intern

May 2020 - Present

- Working on COVID CT Scan Image Classifier using Deep Learning and Transfer Learning Approaches. Used the official COVID CT dataset by UCSD Research Group.
- Augmented the training set with horizontal flip, gaussian noise and rotation which boosted the results. Used Imagenet models like ResNet, VGG, DenseNet, Xception by transfer learning.
- Proposed parallel CNN model outperformed the existing published works on that dataset.

Indian Institute of Information Technology Guwahati
Remote Research Intern

May 2020 - Aug 2020

- Worked on a research project on public Bike Sharing Systems using Machine Learning techniques. Used the official Divvy Bike System Data in our project.
- Developed a novel bike recommendation system which recommends top 3 bikes to the user based on the user's travel demands and prevailing weather conditions. Further proposed a bike usage optimisation strategy to identify the actively used bikes.
- Grouped bikes with similar behavioural patterns using K-means clustering and built a neural network model to predict the best cluster for user's inputs. The model achieved accuracy of 97%. This research project led to a conference paper.

Indian Institute of Information Technology Allahabad
Winter Research Intern

Nov 2019 - Jan 2020

- Studied various Biomedical Imaging Modalities like Ultrasound Imaging, Photoacoustic Imaging, MRI.
- Simulated phantoms of various shapes using K-Wave toolbox in MATLAB
- Studied various Image Reconstruction Algorithms like UBP, TR and implemented different simulation techniques like Monte-Carlo Simulation

PUBLICATIONS

- **A.M. Joshi**, A.K. Das and S. Dhal, **"Deep Learning Based Approach For Malaria Detection in Blood Cell Images"**, IEEE TENCON 2020 *(Accepted)*
- A.K. Das, **A.M. Joshi** and S. Dhal, **"A Machine Learning Based Bike Recommendation System Catering to User's Travel Needs"**. *Under Review*

ACHIEVEMENTS

- Got interviewed jointly by IBM and Coursera Officials for IBM's upcoming video project.
  Was among the top performers worldwide of IBM's APPLIED AI course on Coursera and got selected for final interview after few selection rounds.
- 3rd Prize in IEEE Technical Presentation Competition 2020 for my research work titled "Accident Avoidance Alert System for Drivers".

RESEARCH INTERESTS

- Deep Learning
- Computer Vision
- Medical Image Analysis

PROJECTS

Brain Tumour Detection using Deep Learning

May 2020

- Built an CNN Model for Brain Tumour detection on Kaggle's Brain Tumour Dataset. Further used ImageNet models using Transfer Learning Techniques.

Malaria Detection on Microscopic cells

May 2020

- Built an Image Classification Model for Malaria detection on Microscopic cell images using Deep Learning Techniques on NIH Gov's Official Dataset. Model achieved Accuracy of 99.44 and AUC of 99.40

Accident Avoidance Alert System for Drivers

April 2020

- Built an Object Detection Model that detects road signs, vehicles and pedestrians and notifies it to the driver by giving a count of objects detected.

TECHNICAL SKILLS

- **LANGUAGES :**
  Python | C++ | Java | HTML | LateX
- **LIBRARIES :**
  TensorFlow | Keras | OpenCV | Numpy | Pandas | sci-kit
- **SOFTWARE :**
  MATLAB | Simulink | Jupyter Notebook | Pycharm

ONLINE COURSES

- **MIT 6S.191**
- **Stanford CS230**
- **Stanford CS231n**
- **IBM APPLIED AI**
- **deeplearning.ai by Andrew Ng**