

Nimesh Kumar

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Education

Doctor of Philosophy (Dropped Out)

Indian Institute of Information Technology (CSE) • Patna
01/2022

- Cumulative GPA: 8.5/10
- Relevant Coursework: Machine Learning, Artificial Intelligence, Professional Communication

Master of Technology

Jaypee Institute of Information Technology (CSE) • Noida
05/2020

- Cumulative GPA: 8.5/10
- Relevant Coursework: Machine Learning, Data Structure and Algorithm, Big Data, Blockchain

Experience

Software Engineer

Carpl.ai • New Delhi
12/2021 - Present

- Utilized python fastapi library to implement scheduler based three API that comes under Middlelayer of carpl.ai workflow in python, Additionally performed unit testing of same.
- Utilized python pydicom package to create a labelled dataset by converting 13500 mammogram dicom files into generalised image format and implement deep learning based algorithm for classifying mammogram view position i.e. rcc, lcc, lmlo, rmlo with 98% accuracy and 95% AUC dismissing the chance of failing when view information is not present in dicom tags while predicting breast cancer. Additionally performed unit testing and build a scheduler based service using fastapi and MySQL.

Machine Learning Engineer Intern

Carpl.ai • New Delhi
08/2021 - 11/2021

- Utilized python pydicom package to create a labelled dataset by converting 5000 Computed Tomography dicom files into generalised image format and implement deep learning based algorithm for detecting whether a person has a Tuberculosis or not with an Accuracy of 95% and AUC 89%. Additionally performed unit testing, helping organization to get a approximately 3TB of radiology data from one of reputed Tamil Nadu Hospital.
- Utilized python to implement EAST (Efficient Accurate Scene Text Detector) and reduced final model size from 385Mb to 16Mb using several model size reduction technique, converted the reduced keras model to tensorflow.js compatible model for detecting text in an image in the browser itself and avoid any kind of data leakage from the sever.

Skills

- **Programming Languages** : Python, C, JavaScript, HTML
- **Machine Learning** : Computer Vision, Tensorflow, Numpy, Pandas, Sciket Learn Keras, Seaborn, Matplotlib, Pydicom, Deep Learning, BERT.

- **Data Science** : Data Science Pipeline (Cleaning, Wrangling, Visualization, Modelling, Interpretation), Time series.
 - **Database & Miscellaneous** : SQLite, MySQL, Postgres, APIs, Git, Jira
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Academic Projects and Experience

- **Teaching Assistant**
 - *Indian Institute of Technology*
 - Collaborated with instructor and 2 other TAs to lead recitations, grade coursework and answer 100+ students questions.
 - *Jaypee Institute Information Technology*
 - Collaborated with instructor and TAs to lead recitations, grade coursework and practical work and answers 50+ students questions.
- **Projects**
 - *Indian Institute of Technology*
 - *Hate Speech Detection And Normalization in India*
 - Proposed a model than is based on an encoder- decoder network combined with attention mechanism to normalise the hate tweets and preserve their context. Also a Bert- Capsule classifier is employed to classify hate based tweets. Our proposed model exceeds several classification and style transfer based baseline models with overall accuracy and BLEU score of 83.37% and 0.5417 respectively.
 - *Multimodal Hate Speech classification*
 - Prepared a codemix dataset by scrapping multimodal data from twitter, Instagram and reddit using some specific hate keywords for hate speech classification in memes and proposed model which outperformed several baseline models with accuracy and AUC of 78% and 83%.
 - *Web Application*
 - Utilized python based flask api with html, CSS and JavaScript to built a web application where the above mentioned models are integrated. The data is fetched on the basis of some criteria i.e. keyword, hashtag, userID from the front end and act as an input to our model which classify tweets or posts into hate and not hate. Then the effectiveness score is calculate using the factors like prediction made, No. of followers, No of following, New/Old user etc. And if the effectiveness score is greater than 0.70 then the account information is sent to the Law enforcement agency (LEA).
 - *Jaypee Institute of Information Technology*
 - *Change Detection In Remote Sensing Images*
 - Utilized various segmentation techniques to detected the change in the remote sensing image of Padma River course and measure the change using by Structural similarity measure on every slices of the image .
 - *Autonomous Vehicle*
 - Virtually simulated a self driving car using Udacity's self driving car simulator using Nvidia's Convolutional network. Also, Performed the detection of lane using computer vision and traffic road symbols using neural networks.
 - *Personal Projects*
 - *X-ray image classification*
 - Implemented a transfer learning model using DenseNet to detect Hernia, Infiltration, Mass, Nodule etc. from X-ray image after pre-processing and Handling the class imbalance
 - *Covid-19 Prediction*
 - Utilized keras deep learning library to built a classification model that exceeds several other classification model with overall accuracy of 96.73%. Also, Performed unit testing of the same.

Certificates

- Deep Learning Specialization
- AI For Medicine