Sunil Sharma

Curriculum Vitae

H.No 320,Ajit Nagar
Kapurthala,Punjab,144601
(+91) 7986359035
sharma.sunil5@tcs.com

Education

Qualification	Master of Technology - Digital Communication
Institute	Indian Institute of Information Technology and Management, Gwalior
Duration	July 2016 - May 2018
Overall CGPA	7.42

Qualification	Bachelor of Technology - Electronics and Communication Engineering
Institute	Lovely Professional University, Phagwara, Punjab
Duration	July 2012 - June 2016
Overall CGPA	9.27

Work Experience

Title *Jarvis Bot*

Description A conversational banking assistant AI bot that helps user to view their account balance and let them change their basic details. The bot uses ***NLP*** and ***Machine Learning*** for the conversational flow, Query optimization. The front-end was made using NodeJS and the back-end is created using ***Google dialog flow***. The bot works on the principals of natural language understanding to do the intent classification of the question and gives suitable response according to trained corpus.

Title *Damage Reporting System*

Description A portal is created for reporting of property damage, which enable user to upload picture of damaged property using a chatbot.In the backend a trained ***Convolution neural network*** model is used for classification of the damaged property and its severity. The transfer learning is done using pre-built inception V3 model for object recognition. second model was trained using 2000 images of different property damage and severity. ***Keras*** and ***Tensorflow*** libraries are used for CNN model and API creation.

Title *Health bot*

Description A medical assistant chatbot to connect patient to its doctor. Helps patient by giving recommendation based upon symptoms of illness. The health bot was train and tested using ***RASA*** library, which is an open source conversational AI platform for chatbot creation. In the backend the ***LSTM*** algorithm is used for training of the model.The model can be trained on a personalized corpus to give user a sense of exclusivity. The corpus can be feed in from a user interface using ***flask API***.

Title *Automated Document verification system*

Description A system capable of verifying and extracting the imperative information from a document related to banking and financial services. The classification of the document was done using ***Convolution neural network***. Feature and information extraction is done using ***OpenCV*** and ***Pytesseract*** libraries, which are well known computer vision tools. This system is integrated with ***Elastic search engine*** for better information retrieval.

Research Experience

Place	Indian Institute of Information Technology and Management. Gwalior
Duration	August 2017 - April 2018
Project	A Deep Convolution Neural Network based approach for Diabetic Retinopathy detection and classification
Supervisor	Prof. Anupam Shukla
Research Objective	To construct and analysis of a Deep Convolution Neural Network to detect and grade diabetic retinopathy images.
Individual Responsibility	Pre-processed 50,000 images of diabetic retinopathy taken from Kaggle Competition and Messidor experiment. Cropping, size normalization, image augmentation and Implemented Deep CNN architecture using python.
Outcomes	The proposed Deep CNN algorithm produced significant results with 93% area under the curve (AUC) for the kaggle dataset and 91% AUC for the messidor dataset. The sensitivity and specificity for the kaggle dataset were 90.22% and 85.13%. The corresponding values for messidor dataset were 91.07 and 80.23%. The results outperformed many existing studies.
Tools used	Python 3.5, Numpy, Matplotlib, Scikit-learn, Keras

Research Interest

Machine Learning, Statistics, Artificial Intelligence, Neural Networks, Natural Language Processing, Deep Learning.

Publication

An intelligible deep convolution neural network based approach for classification of diabetic retinopathy.DE GRUYTER: Bio-Algorithms and Med-Systems. Published Online: 2018-06-22.

DOI:https://doi.org/10.1515/bams-2018-0011

Projects

Title	Intent Classification using a Deep Learning Bag-of-Words Model for Predicting Movie Review Sentiment
Description	A multilayer Perceptron bag-of-words model is build on a movie review corpus. The model is built for sentiment analysis purpose to distinguish between a positive and negative reviews. A basic sequential model is created using Keras, after preprocessing of the movie review corpus.
Project link	Github repo

Title	An Ensemble model for Diabetic retninopathy detection
Description	A model is trained and tested using ensemble learning approach. Different Machine learning classifiers are used such as SVM, MLP, KNN, Random Forest, Decision tree, Adaboost for classification purpose. Ensemble model works upon majority voting criteria. all different classifiers trained with same training data and then tested using uniform and weighted voting Ensemble model.
Project link	Github repo

Major Competencies

E2	Digital : Deep Learning
E2	Digital : Artificial Intelligence(AI)
E2	Digital : Machine Learning
E1	Digital : Data Science

Specialization

Deep Learning, a 5-course specialization by deeplearning.ai on Coursera. Specialization Certificate earned on September 29, 2018. Certificate link

Applied Data Science with Python, a 5-course specialization by University of Michigan on Coursera. Specialization Certificate earned on October 4, 2018. Certificate link

Certification

* Machine Learning by Stanford University on Coursera. Certificate link
* Elements Of AI by University of Helsinki,Finland Certificate link
* Natural Language Processing by National Research University Higher School of Economics on Coursera. Certificate link
* Machine Learning: Regression by University of Washington on Coursera. Certificate link
* Machine Learning: Classification by University of Washington on Coursera. Certificate link
* Advanced RPA Professional Certification, License AAADVC-34652219

Programming Languages

Langauge	Python, C++, C
Markup	LaTeX, HTML,CSS
VersionControl	GIT
WebFramework	Flask,Django
OS	Linux,Windows

Achievements and Award

* University Topper in B.Tech ECE (Honours) with CGPA 9.27, Awarded with Academic Honor Certificate.
* I have taken the i-class of different ILP associates in a live session on the topic of Machine Learning, The participant ILP were from Hyderabad, Chennai, Trivandrum, Guwahati and Gandhinagar.
* Cleared GATE 2016 with 97.45 percentile.
* National cadet corps for 'A' certificate.
* Stood Second Place in Inter- IIIT Sports meet in basketball.
* First Position in Regional level Basketball championship under K.V.S Chandigarh region-2010

Interest

Competitive Programming	I am very much interested in solving problems. I use git for my projects and all the projects mentioned are on the Github as a public repo. Excluding some, they are ongoing projects and are as a private repository of github.
Teaching	I am a strong believer that the best way to learn is to teach, I love to teach