Vikrant Kumar Saini

Associate-Projects at Cognizant Technology Solutions

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I have 2 years of academic and 1 year of industrial experience in Machine learning, Deep Learning and Image Processing. Published one Research Paper in CVIP, 2017 SPRINGER on "Robust Image Sharing using One dimensional Chaotic Logistic Map". Having good problem solving and analytical skills.

AREA OF INTEREST

Deep Learning, Machine Learning, Natural Language Processing, Reinforcement Learning, Algorithm

EXPERIENCE

Cognizant Technology Solutions

july, 17- present

Associate-Projects

My responsibilities includes designing and development of machine learning and deep learning based models, tune their hyper-parameters and predict result of them on unseen examples.

EDUCATION

Indian Institute of Technology, Roorkee

July 2015 -May 2017

M. Tech

Successfully completed my masters with the CGPA of 8.56 in Computer Science and Engineering. Also published a Research Paper in the field of Visual Cryptography.

Meerut Institute of Engineering and Technology

July 2010-June 2014

B. Tech

Successfully completed my bachelors with the percentage of 72.16 in Computer Science and Engineering.

Lala J P SVM jansath road Muzaffarnagar

July 2009- June 2010

12th

Successfully completed my intermediate with 83.8 % in PCM Stream.

S V Mandir Inter College Muzaffarnagar

July 2008- June 2009

10th

Successfully completed my high school with 76.67 %.

PROJECTS

Intelligent character recognition (ICR)

April 2018 - present

In this project, we are addressing problem of identification of handwritten words that are extracted from forms such as banking, application forms. Words are divided into two forms: constrained word (character are separated) and unconstrained (recursive). Words can be of any combination such as alphabet, digits, alphanumeric (address field in forms), in constrained form, character level prediction is used and we got 89 % of accuracy on unseen data. For constrained words we are currently training a model on word level. During our journey for unconstrained words, we are seeing reinforcement learning scope for future perspective to segment characters of words, so that same model (constrained one) can be used for this one also.

Technologies Used:-

Software Packages: Pandas

Framework: Tensorflow, Keras

Language: Python

Document image object classification and localization using YOLO

January 2018- March 2018

This project is aimed to design and develop a deep neural model that will detect and named the objects such as paragraph, table, image, heading, list in document image with their confidence value. We used You Only Look Once (YOLO) algorithm to train and predict result on unseen document images. CNN model is trained with 10K document images and 13 deep CNN layers.

Technologies Used:-

Software Packages: Pandas

Framework: Tensorflow, Keras

Language: Python

PDF document parsing

September 2017 - December 2017

This project is aimed to develop a model that will generate a html page of same content that a PDF have, PDF file can be of any type like full page text, full page image or combination of both of them. To extract the the data from an image pdf we used the tesseract OCR and to extract data from text pdf we have used pdfminer.

Technologies Used:-

Software Packages: pyocr, pdfminer, opencv

Language: Python, java

Neural Style Transfer

June 2017- July 2017

This project is aimed to create your own stylish image with the help of style transfer feature of deep neural networks. In this project we used content image and style image and with the help of transfer learning you can incorporates any style into your own image such as Picasso style. CNN layers is used to make deep neural learns and Keras as a deep neural Framework.

Technologies Used:-

Framework: Tensorflow, Keras

Language: Python

Sentiment Analysis

January 2017 - March 2017

This project aims to find the sentiments of tweets or any text, sentiment can be positive, negative or neutral. Throughout the project, multiple supervised models were implemented such as SVM, Tree classifiers, voting classifiers and at the end RNN deep neural net was also tested. My responsibilities included to train the models and predict the correct sentiment of unseen live tweets.

Technologies Used:-

Software Packages: Scikit-Learn, Nltk, Spacy

Framework: Tensorflow, Keras

Language: Python

Implementation of Secret Sharing scheme using Chaotic Map

June 2016- May 2017

Objective:- It is a project based on Shamir's secret sharing scheme used to securely transmit confidential data images to the number of departments within organization. It distributes shares of image in such a way that no department can individually recover the original image. For recovery, it requires user specified number of mutually agreed department shares. The first two image shares can reveal the original identity. In the proposed solution the help of chaotic map is taken to secure the document image. If number of departments is less than threshold value then even the brute force attack can also be prevented.

Technologies Used:-

Software Packages: Matlab

Bridges and Road Maintenance

March 2016-Aprail 2016

The objective of this project is to analyze different algorithmic strategies for the solution of Bridges And Road Maintenance using Data Mining Techniques. Decision Tree and Support Vector Machine algorithms are analyzed on raw data collected from NHAI and finds the best suited algorithm that characterize the level of maintenance requires in roads and bridges.

Technologies Used:-

Software Packages: Weka
Language: Java

SKILLS

Computer languages: C, C++, Java, Python.
Software Packages: Netbeans, MATLAB(R2013a), Eclipse.
Machine Learning and NLP libraries: Nlkt, Scikit-learn, Matplotlib, Spacy, Pdfminer, Opencv.
Deep Learning Framework and Libraries: Tensorflow, Keras, Gensim

CERTIFICATIONS

Neural Networks and Deep Learning
February 2018
Coursera

Improving Deep Neural Networks: Hyperparameter tuning, Regularization and Optimization
February 2018
Coursera

Structuring Machine Learning Projects
February 2018
Coursera

Convolutional Neural Networks
February 2018
Coursera

Sequence Models
march, 2018
Coursera

Deep Learning Specialization
March, 2018
Coursera

GATE 2014, 2015, 2016
March 2014, March 2015, March 2016
National Co-ordination Board – GATE, Department of Higher Education
Secured AIR-1150 with GATE Score of 653 in GATE 2014.
Secured AIR-556 with GATE Score of 721 in GATE 2015.
Secured AIR-676 with GATE Score of 706 in GATE 2016.

JEST 2015
Aprail 2015
The Science & Engineering Research Board (SERB)
Secured AIR-66 with JEST Score of 38.

CSIR-UGC NET
January 2016
University Grants Commission (UGC)
Secured AIR-122.

LANGUAGES

English (Full Proficiency), **Hindi** (Native)

PUBLICATIONS

Robust Image Sharing Using One dimensional Chaotic Logistic Map
SEPTEMBER 2017
CVIP, 2017, SPRINGER
In today's world, image sharing has been a vital area of digital industry. Images are transmitted over an insecure transmission channel and are vulnerable to possible attacks. In this paper, we propose a novel technique for secure transmission of images. The method consist of two phases. In the first phase, user has to input a key of 256 bits. Arithmetic mean of the image and chaotic logistic map is used to

generate key image. In the second phase, two layered Shamir's secret sharing scheme(SSS) architecture is used with cascading XoR operation. Receiver can get the secret image back by applying reverse of the proposed method and secret key transmitted through the same insecure channel. In contrast to the previous schemes, our proposed scheme provides better utilization of bandwidth and robust against different possible attacks.

RECOMMENDATIONS

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Associate Professor

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IIT Roorkee

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