Projects

**Using Satellite Imagery to Detect and Assess the Damage of Armyworms in Farming**

**June 2021- till date**

* This is Omdena OKO project. The project aims to utilize satellite images, detect and identify the damage assessment of either or all together (depending on data availability): Fall Armyworm, Africa Armyworm Locust Desert, surge/outbreak in Mali (or Ivory Coast or Ouganda) in order to design an insurance product.

**NLP with disaster tweets April 2020- June 2020**

* This is an ongoing Kaggle competition project where the problem is to identify which tweets are real ones and which ones are not. This model uses the implementation of BERT from the TensorFlow Models repository on GitHub

**Garbage Profiling Problem using CNN and transfer learning May 2019- June 2020**

* The Garbage Profiling Problem looks at capturing images of the garbage at local garbage collection points and analysing the same to create a rating for the community on the parameters of waste segregation. This analysis could be used to create feedback for the civic bodies to understand or identify communities where they need to take action to make sure this change is brought into action.

**Detection of plant leaf diseases using Convolutional Neural Networks Jan 2019- till date**

* Implementation of automatic plant disease diagnosis system by collecting images in a real-world environment and by applying different augmentation techniques

**Dog breed classifier Aug 2018- Nov 2018**

* Developed a CNN based algorithm for classifying the images of dog based on the breed using keras and tensor flow.
* Used transfer learning (Inception bottleneck features) for improving the accuracy. Different types of activation functions were also tried and by tuning the hyper parameters 79.8 % accuracy was obtained.
* The same work was again implemented using Pytorch

**An adaptive transient tracking control for shunt active power filter Jan 2017- Jun 2017**

* Developed a control scheme for active power filter based on empirical wavelet transform to track the fundamental load current during transients
* Reduced the power dissipation across inverter switches during transients by 50% (as compared to conventional scheme) under various operating conditions with Total Harmonic Reduction (THD) within IEEE standard limits

**A Novel Approach to mine Cyclic Association Rules for Fast-Food Industry**

**Jun 2015- Apr 2016**

* Developed an algorithm for the extractions of cyclic association rules for a Fast food outlet
* This algorithm helps to create more attractive combo offers based on the analysis of past data for boosting the revenue by increasing the number of customers visiting his food joint

**Plagiarism Detection in Source Code July 2009-Nov 2011**

* Project funded by IPR division of Ministry of Communications and Information Technology, Govt of India to develop a tool for detecting plagiarism among a group of submitted source code. Source code tested were in C, C++ and Java

**Tools for Automatic Machine Translation from English to Dravidian Languages**

**Feb 2009 – Jul 2009**

* Project funded by Ministry of Human Resources and Development, Govt of India. Developed a prototype Dravidian WordNet. Created linguistic tools that aids machine translation based on machine learning approach