Learning Features and Parts for Fine-Grained Recognition

Dataset: The image dataset can be found on <http://ai.stanford.edu/~jkrause/cars/car_dataset.html>. This dataset contains 16,185 image classification pairs of 196 different classes, split into 8,144 training and 8,041 test images. Each classes accordingly order of year, make and model of a vehicle

Outcome: In this an object representation is done that detects important parts and describes ﬁne grained appearances using neural networks.

Project Definition: Fine-grained recognition refers to a subordinate level of recognition, such as recognizing different species of animals, aircrafts, cars, humans and computers. In this project neural networks (CNNs) is used to learn appearance descriptors and perform unsupervised part discovery to obtain a collection of part detectors.

Datasets incudes of the 10 types of BMW (Bmw-10 series) with 512 images having many view points along bounding boxes and hand-curated. Also 196 car models with 16,185 images. All work will be done on class labels and bounding boxes of the car.

It will be implemented by splitting the dataset into two: train and test, images are cropped to their ground truth bounding box this is done for identifying the make and models of cars from various angles and different settings with the added constraint of limited data and time.