**Introduction**

**% Definition of the problem addressed by the paper Zhang et al (in your own words)**

Traffic Sign Recognition has been a research area of interest for driving assistance, traffic sign maintenance and autonomous vehicles. It is essential that an autonomous vehicle can recognise the correct traffic sign on the current road system in order to correctly operate around human-operated vehicles and act as an intelligent transport system. The recognition software must also be relatively insensitive to changes in rotation, translation, size and lighting for example in the input image. Using artificially chosen features and applying machine learning techniques do not perform well to slight changes in such images. For this reason, a deep learning architecture known as convolutional neural networks are known to be insensitive to translation, which means it is much more suitable to be applied to the problem.

Convolutional neural networks (CNN) can be used with multiple layers to extract a specific feature out from the input image within each layer. CNNs have the invariant properties of shift, rotation and scale so can be successfully applied to the traffic sign recognition problem.

The German traffic sign recognition benchmark (GTSRB) dataset is used which since its creation in 2011 has been used to evaluate performance on the traffic sign recognition problem.

* Traffic sign recognition research areas of interest
* Importance of research
* Systems must be insensitive to transformations and more (typical problems that affect decision making)
* A certain machine learning technique does not do well
* Neural Networks are insentive to translation
* More reasons for neural network
* Dataset used as benchmark

**Method**

%up to 20 lines summarising the method of Zhang et al (in your own words)