[1]The purpose of this document is to collect information relevant to the development from different sources.

I have no authorship on the contents of this document, and do not intend to claim any by compiling the different information in this place.

The source of each piece of information is appropriately cited when relevant.

Relevant topics (index):

* The Weather Classification problem
  + Description
  + Applications
  + Approaches
* Convolutional Neural Networks
  + Inception
  + History
  + Traditional Architecture
  + Future work
  + Implementations
    - AlexNet
      * <http://papers.nips.cc/paper/4824-imagenet-classification-with-deep-convolutional-neural-networks.pdf>
    - GoogLeNet
      * <https://arxiv.org/pdf/1409.4842v1.pdf>
    - ResNet
      * <https://arxiv.org/pdf/1512.03385v1.pdf>
    - Places
      * <http://places.csail.mit.edu/places_NIPS14.pdf>
    - VGGNet
      * <https://arxiv.org/pdf/1409.1556v6.pdf>
    - VGGCNN F/M/S
      * <http://www.robots.ox.ac.uk/~vgg/publications/2014/Chatfield14/chatfield14.pdf>
* Caffe framework for Deep Learning

* The Weather Classification problem
  + Description

“Vision based driver assistance systems (DAS) are currently designed to perform under good-natured weather conditions. Unfortunately, limited visibility often occurs in daily life (e.g. heavy rain or fog). As this strongly affects the accuracy or even the general function of vision systems, the actual weather condition is a valuable information for assistance systems. Based on the results of weather classification, specialized approaches for each class can be invoked to improve cognition. This will form a key factor to expand the application of DAS from selected environmental conditions to an overall approach.” [1]

“The weather affects our daily lives in many ways, from solar technologies, outdoor sporting events, to the sort of clothes we wear and whether to stay indoors or not on weekend.

While current accurate weather detection technologies rely on expensive sensors, for centuries weather observing tools consisted of the human eye (and various human senses as well). If we can exploit existing surveillance cameras, which are found almost everywhere, it may be possible to turn weather observing and detection into a powerful and cost-effective computer vision application. ” [2]

* + Applications
  + Approaches

# Works Cited

|  |  |
| --- | --- |
| [1] | M. Roser and F. Moosmann, "Classification of Weather Situations on Single Color Images," in *2008 IEEE Intelligent Vehicles Symposium*, Eindhoven, 2008. |