From studying 5 deep learning in image processing field papers published during 2012 - 2019, we find them interesting and decided to summarize them:

1. Zilong and his team conducted a survey on deep learning architectures on cancer detection and diagnosis. They provide an overview on four most popular deep learning architectures, which are convolutional neural network, fully convolutional networks, autoencoders and deep belief networks. They analysed multiple sources on deep learning application to breast, lung, skin, prostate and other cancer types detection and diagnosis and summarize them then provide potential research for the future.
2. Chien-Hung and his team designed a smart in-car camera system using mobile cloud framework for deep learning. The camera is able to detect objects in recorded video and decide which parts of video to be stored into the cloud to save local storage space. The system is implemented in NVIDIA Jetson TK1 for image processing and carried out Git protocol communication to ensure good data transmission. They also found that the importance of GPU to play a critical parts in a good recognition system for deep learning.
3. Ajeet and his team conducted their studies on the visual recognition systems which include image classification, localization and detection. They improve the recognition performance by using deep learning. This paper also showed multiple deep learning framework and the comparison of convolutional neural network methods for object detection.
4. Yuan and his team provide a comprehensive literature review on deep learning application on various transportation applications. They examined four application including traffic sign recognition, traffic flow prediction, traffic speed prediction and travel time prediction. They recommend to adopt convolutional neural network model for image processing to solve the first application while the rest of application are time series prediction with additional features such as weather and network structure. They also summarize the future direction of deep learning in intelligent transportation system.
5. Ji and his team researched on content based image retrieval (CBIR) system which is a type of query using image instead of text. and investigate deep learning in computer vision to help in improve CBIR tasks. They examining convolutional neural network method for CBIR tasks with multiple settings. They found normal deep learning model pre-trained on large scale dataset can be used directly for features extraction and capture high semantic information and usually outperform the hand-crafted model features.

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