Short Story Proposal

Learning from Few Samples

(Survey Link: https://arxiv.org/pdf/2007.15484.pdf)

Artificial Intelligence and Deep Learning have started occupying a big part of human lives and have an extensive range of applications in various sectors such as space, health care, automobile industry, etc., Few decades ago, the ability of the Artificial Intelligence was restricted by the lack of data, limited resources to handle data, and computation power. Now, we have the capability to overcome all the restrictions.

The ultimate goal of AI is to outperform the abilities of human beings in any given task. Undoubtedly, for this, it is necessary to have large, balanced, and labeled datasets. But it is unrealistic to expect the perfect datasets for all the tasks and it can also involve human efforts and time to create one. The model should also be competent to work well with a new sample to match human abilities.

In this proposal, the interesting methods to handle limitations of lack of data in the area of computer vision are discussed. Meta-learning, few-shot learning, low-shot learning, and zero-shot learning are powerful solutions. These representation-based learning methods make the model generalize more, perform better with only a few data in hand and prior knowledge.