than one way is also an area to work upon where more accuracy can be achieved. Language containing informal phrases, expressions, idioms, and culture-specific lingo make difficult to design models intended for the broad use, however having a lot of data on which training and updating on regular basis may improve the models, but it is a really challenging task to deal with the words having different meaning in different geographic areas. In fact, such types of issues also occur in dealing with different domains such as the meaning of words or sentences may be different in the education industry but have different meaning in health, law, defense etc. So, the models for NLP may be working good for an individual domain, geographic area but for a broad use such challenges need to be tackled. Further together with the above-mentioned challenges misspelled or misused words can also create a problem, although autocorrect and grammar corrections applications have improved a lot due to the continuous developments in the direction but predicting the intention of the writer that to from a specific domain, geographic area by considering sarcasm, expressions, informal phrases etc. is really a big challenge. There is no doubt that for most common widely used languages models for NLP have been doing very well, and further improving day by day but still there is a need for models for all the persons rather than specific knowledge of a particular language and technology. One may further refer to the work of Sharifirad and Matwin (2019) [123] for classification of different online harassment categories and challenges, Baclic et.al. (2020) [6] and Wong et al. (2018) [151] for challenges and opportunities in public health, Kang et.al. (2020) [63] for detailed literature survey and technological challenges relevant to management research and NLP, and a recent review work by Alshemali and Kalita (2020) [3], and references cited there in.

In the recent past, models dealing with Visual Commonsense Reasoning [31] and NLP have also been getting attention of the several researchers and seems a promising and challenging area to work upon. These models try to extract the information from an image, video using a visual reasoning paradigm such as the humans can infer from a given image, video beyond what is visually obvious, such as objects' functions, people's intents, and mental states. In this direction, recently Wen and Peng (2020) [149] suggested a model to capture knowledge from different perspectives, and perceive common sense in advance, and the results based on the conducted experiments on visual commonsense reasoning dataset VCR seems very satisfactory and effective. The work of Peng and Chi (2019) [102], that proposes Domain Adaptation with Scene Graph approach to transfer knowledge from the source domain with the objective to improve cross-media retrieval in the target domain, and Yen et al. (2019) [155] is also very useful to further explore the use of NLP and in its relevant domains.

6 Conclusion

This paper is written with three objectives. The first objective gives insights of the various important terminologies of NLP and NLG, and can be useful for the readers interested to start their early career in NLP and work relevant to its applications. The second objective of this paper focuses on the history, applications, and recent developments in the field of NLP. The third objective is to discuss datasets, approaches and evaluation metrics used in NLP. The relevant work done in the existing literature with their findings and some of the important applications and projects in NLP are also discussed in the paper. The last two objectives may serve as a literature survey for the readers already working in the NLP and relevant fields, and further can provide motivation to explore the fields mentioned in this paper. It is to be noticed