Abstract

People all around the world attempts various entrance-level exams to test their proficiency in English. Most of these people are English as a Second Language (ESL) learners & some assistance from a teacher can be helpful in their progress, as they can provide continuous feedback on their writings. This process can be automated, and the process of detecting and correcting grammar errors in a text is called Grammatical Error Correction (GEC) in “Natural Language Processing” Domain. Three approaches have been used for solving GEC task, namely “Rule-based”, “Classification-based”, & “Machine Translation”, with Machine Translation further broken down into “Statistical Machine Translation” and “Neural Machine Translation”.

The paper states how the researchers have used these approaches, and what setbacks or improvements in technologies paved the way for using better and more advanced approaches to GEC. It also states the understanding on how the GEC task can be improved, and what will be the tradeoffs for achieving higher performance in the future.
References

1. Dahlmeier, D., Ng, H. T., and Wu, S. M., “Building a large annotated corpus of learner
   evaluation of machine translation,” in Proceedings of the 40th Annual Meeting of the
3. Napoles, C., Sakaguchi, K., Post, M., and Tetreault, J., “Ground truth for grammatical
   error correction metrics,” in Proceedings of the 53rd Annual Meeting of the Association
   for Computational Linguistics and the 7th International Joint Conference on Natural Language
4. Dahlmeier, D., and Ng, H. T., “Better evaluation for grammatical error correction,” in
   Proceedings of the 2012 Conference of the North American Chapter of the Association for
   Computational Linguistics: Human Language Technologies (Association for Computational
   Proceedings of the 16th Conference on Computational Linguistics-Volume 1 (Association for
   Checker, 2016.
   system in the CoNLL 2013 shared task,” in Proceedings of the Seventeenth Conference on
9. Dahlmeier, D., and Ng, H. T., “A beam-search decoder for grammatical error correction,”
   Processing and Computational Natural Language Learning (Association for Computational
    effect of learner corpus size in grammatical error correction of ESL writings,” Proceedings of
    COLING 2012: Posters, 863–872.
    techniques,” in Proceedings of the 21st International Conference on Computational Linguistics
    and the 44th Annual Meeting of the Association for Computational Linguistics (Association for
12. Felice, M., Yuan, Z., Andersen, Ø. E., Yannakoudakis, H., and Kochmar, E.,
    “Grammatical error correction using hybrid systems and type filtering.” in CoNLL Shared Task,
    pp. 15–24, 2014.
14. Chollampatt, S. and Ng, H.T., April “A multilayer convolutional encoder-decoder neural
    network for grammatical error correction.” In Thirty-Second AAAI Conference on Artificial
    Intelligence, 2018.
    grammatical error correction with hybrid machine translation.” arXiv preprint arXiv:1804.05945,
2018.

**Index Terms**

Computer Science  Information Sciences

**Keywords**

Grammatical Error Correction (GEC), Machine Translation, Natural Language.