Title of the research Paper: Transformers in the Real World: A Survey on NLP Applications
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Summary:

After the introduction of Transformers through " Attention is All you Need" [2017], it has brough great development to the field of Natural Language Processing. The parallel processing method of transformers has resulted in fast and effective outcomes. Over the years, many state-of-the-art models have been introduces, but most of their internal architecture are restricted for general public observation. An open source model can inspire researchers to develop the algorithm further and make furthermore contributions to the NLP field. So, the researchers of this paper collected a great number of open-source transformers models for others to research on.

Hypothesis:
All transformers models are divided into 3 categories: i) Encoder-Only Architecture, ii) Decoder-Only Architecture, iii) Encoder-Decoder Architecture. Among these categories the nlp tasks are divided into multiple applications such as discriminative tasks, text generation, text summation, and machine translation etc.

Contribution:
This research paper works both as an introduction of transformers to the new researchers and also as a guideline for individuals to select a suitable NLP field. The researchers gathered around many open-source, free-to-alter models so that other participants can understand and develop the methods without having to start from the scratch.

Methodology:
All the research paper mentioned in this paper contains the full code of the model. To gather these papers the researches used "PapersWithCode" website. They initially collected 572 entities. After that they eliminated entries with a high degree of similarity. Secondly, the removed the entries composed solely on uppercase letters to avoid abbreviations and acronyms. Thirdly, entries containing number and with fewer than five characters are removed. Finally, entries with over specific tasks were deleted.

Conclusion:
The research paper was written to promote accessibility, reproducibility, and collaboration within the research community. The aim is to assist fellow researchers and practitioners to refine and adapt existing models and architectures. During the research, it was also found that the research works focuses mainly on larger models with higher parameter counts while real-world applications utilizes fewer parametered models. The researchers also stated that compact models are preferable most of the time for producing comparative results.

Limitations:
This is a survey type research and lacks quantitative data and comparisons.

First Limitation/Critique:
The researchers did not dived into the core algorithms of the models. So it will be little difficult for readers to select a proper field and technique just by reading this paper alone.

Second Limitation/Critique:
Though the paper directes the readers to the open-accessed repositories of each model, it would have been better if a code executed comparison were shown between the models.

Synthesis:
This research paper collected most of the applications which uses transformers and NLP. So it works as an introductory paper for researchers to dive into the NLP-transfromers field. Also, it gives new possibilities for other practitioners to conduct qualitative and quantitative researches on the mentions open-source models and applications