

## ABSTRACT

In the digital era, graphic design plays an important role in a company's marketing strategy, especially advertising posters that can convey messages to the audience. However, the process of creating attractive and informative posters takes a long time, especially in the placement of components in the layout. This research aims to develop a layout generator system that automatically places components on the layout using one of the transformer-based methods. The transformer-based method used is a Graph Transformer with Edge Features called SGTransformer, which accepts input data as a graph. SGTransformer consists of several graph transformer layers that will calculate the attention of a node and edge features on the input layout graph. A layout graph describes the spatial relationship between components in a layout. The SGTransformer model was trained using advertising poster datasets collected from social media. This research uses several evaluation metrics commonly used in the layout generation domain such as Alignment, Overlap, Max IoU, and FID score. The evaluation results obtained alignment with a value of 0.025, overlap with a value of 1.274, Max IoU with a value of 0.325, and FID Score with a value of 8.575. The model evaluation results show that the SGTransformer method can produce structured and more diverse layouts although there are still challenges such as overlap between components. Code and other materials will be released at <https://github.com/syahdeee/Layout-Generator>.