We investigate how visual and textual contents affect graphic design layouts and modeling graphic design layouts conditioned on the contents to be presented.

Problem

We propose a probabilistic generative framework for modeling content-aware graphic design layouts.

Framework

(1) Multi-modal Embedding Network: encodes multi-modal contents and the attributes of designs.

(2) Layout Generative Network: models the complex layout distribution.

We construct a large and diverse magazine layout dataset with 3,919 pages and corresponding annotations, including design categories, fine-grained semantic layouts and keywords.

Automatic/Constrained Layout Generation

Effect of Contents on Layouts

Keywords:

bride, ceremony, venue, dance, party, celebrate

Category:

wedding

Keywords:

cake, beach, serve, menu, host, drink

Category:

Wedding

Keywords:

love, choice, heart, honeymoon

Category:

Wedding

Keywords:

ceremony, reception, plan, party

Category:

Wedding

Keywords:

restaurant, taste, kitchen, food, drink

Category:

Wedding

Keywords:

place, town, season, visitor, guest, tour

Category:

Travel

Keywords:

house, beach, discover, island