Letting Logos Speak: Leveraging Multiview Representation Learning for Data-Driven Logo Design

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Abstract

Logos serve a fundamental role as the visual figureheads of brands. Yet, due to the difficulty of using unstructured image data, prior research on logo design has largely been limited to non-quantitative studies. In this work, we explore logo design from a data-driven perspective. We develop both a novel logo feature extraction algorithm that uses modern image processing tools to decompose pixel-level image data into meaningful features, and a multiview representation learning framework that links these visual features to textual descriptions of firms, industry tags, and consumer ratings of brand personality. We apply this framework to a unique dataset of hundreds of brands. Our model is able to predict which brands use which logo features, and how consumers evaluate these brands’ personalities. Moreover, we show that manipulating the model’s learned representations through what we term “brand arithmetic” yields new brand identities, and can help with ideation. Finally, through an application to fast food branding, we show how our model can be used as a decision support tool for suggesting typical logo features for a brand, and for predicting consumers’ reactions to new brands or rebranding efforts.