

Shared Latent Space of Font Shapes and Their Noisy Impressions

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1. Introduction

Motivation

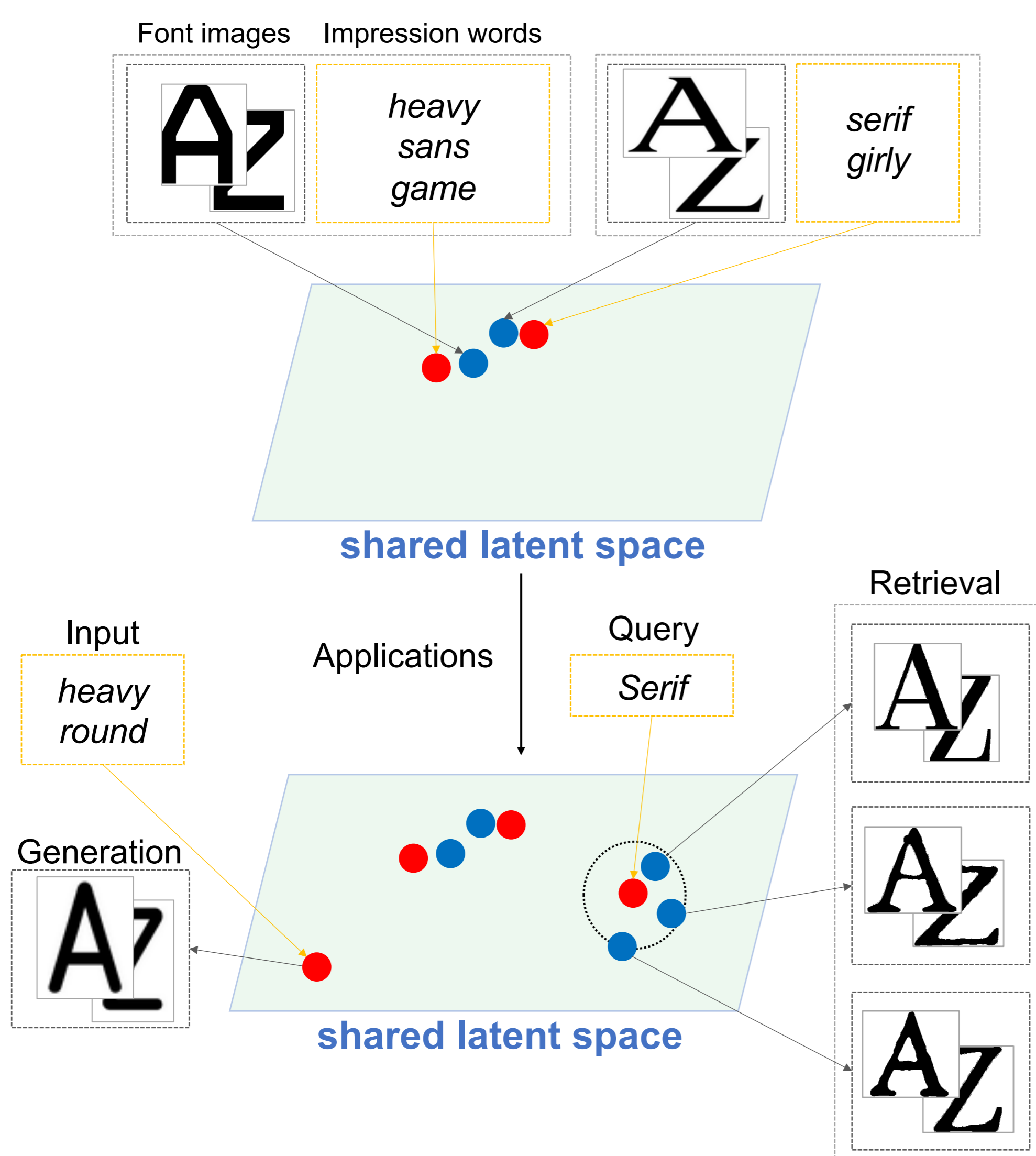
- Understand the correlation between shape and impression allows for more effective expression of the designer's intent

Problem

- Impression words are often noisy
 - The impression of a font is **subjective**
 - Often **irrelevant** to font shape

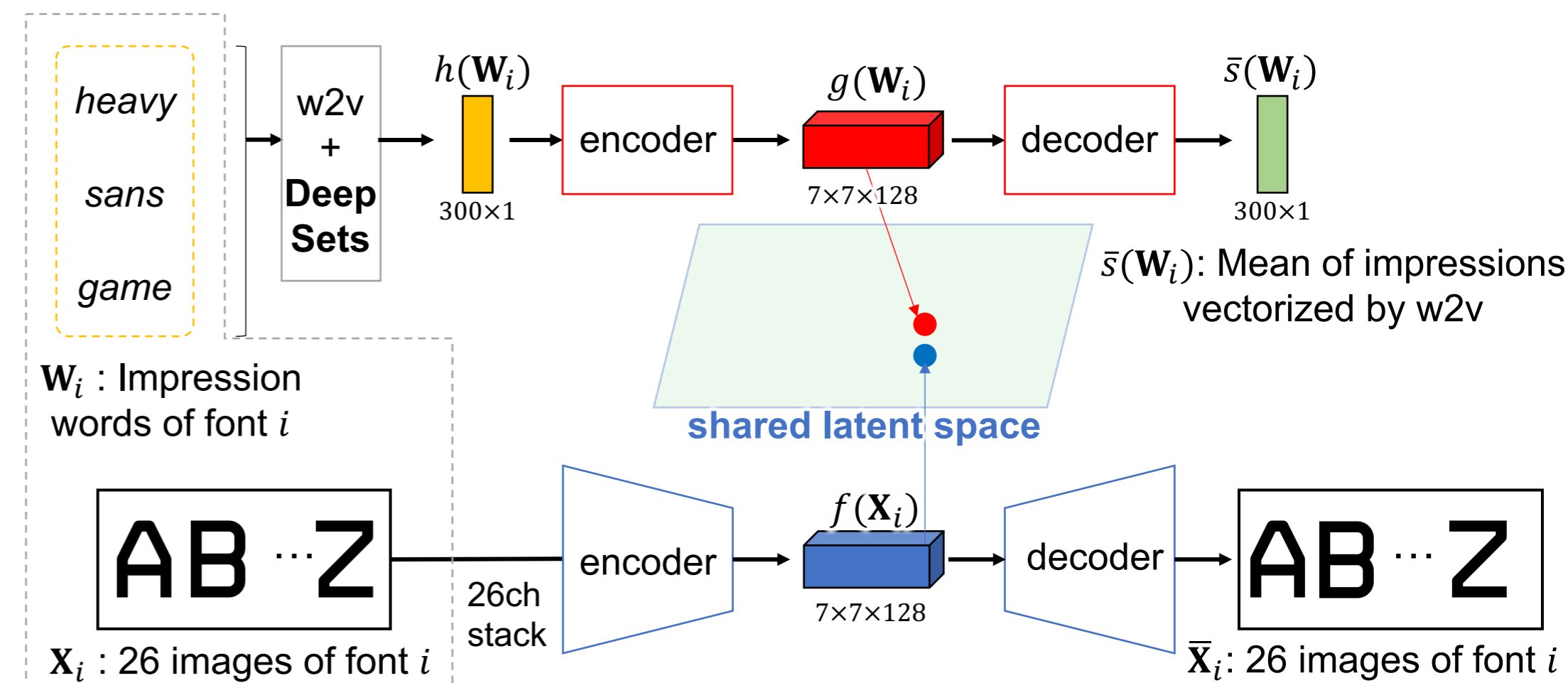
2. Purpose and Applications

- Realize a shared latent space of shape and impression considering noise of impression in order to understand their correlation
- The shared latent space can be used for font image generation and retrieval



3. Proposed method

- To consider noisy impression words, we introduce **DeepSets[*]** into the cross-modal embedding scheme.



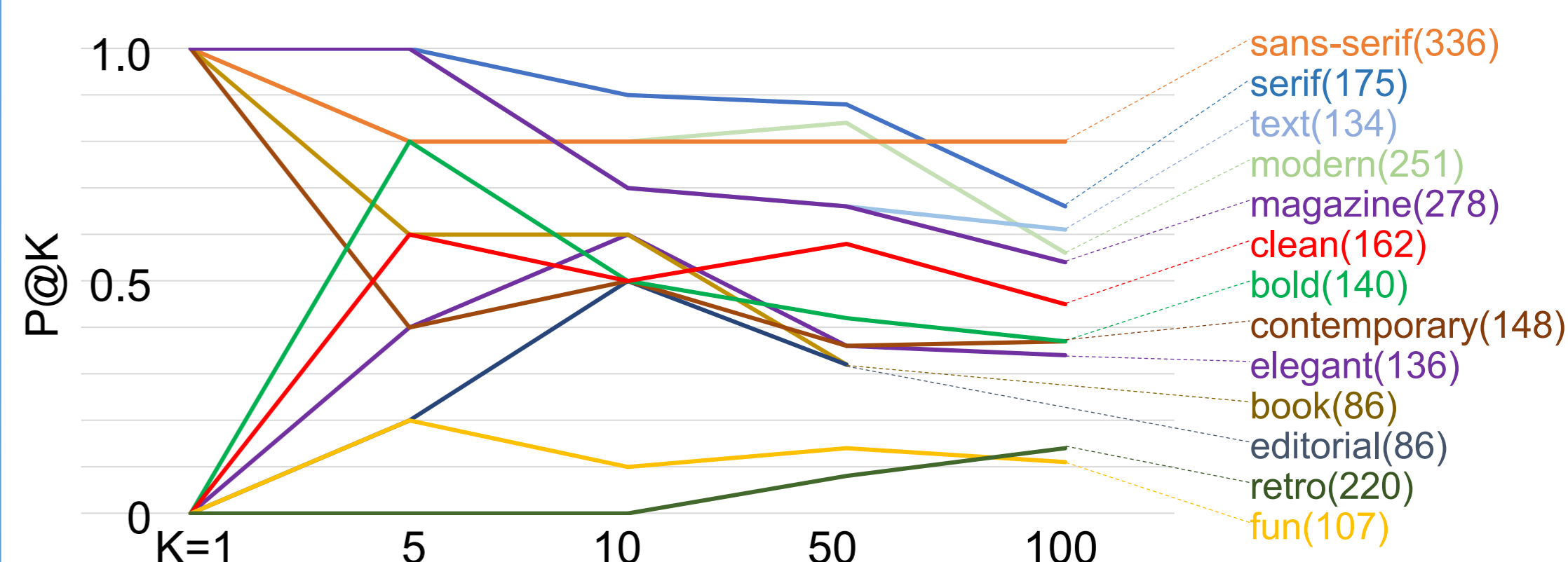
4. Font image generation

- Shape-relevant words: The style generated from the specified impression
- Shape-irrelevant words: Neutral style
- Multiple shape-relevant words: Mixed style



5. Font image retrieval

- $P@K$ indicates the ratio of the correct fonts among K retrieved fonts
- Most of the 11 words with higher $P@10$ are shape-relevant words



* M. Zaheer, et al. "Deep Sets," In NIPS, 2017.