Abstract

Language Model smoothing is an imperative technology which deals with unseen test data by re-evaluating some zero-probability n-grams and assign them bare minimum non-zero values. There is an assortment of smoothing techniques employed to trim down tiny amount of probability from the probable grams and share out to zero probable grams within a Language Model. Kneser Ney and Latent Dirichlet Allocation algorithm are two probable techniques used for proficient smoothing. In this paper, a scheme is proposed for effective smoothing by combining Kneser Ney and Latent Dirichlet Allocation approaches. Moreover, another scheme is proposed to measure the reliability of a Language Model and determine the association between entropy and perplexity. These schemes are demonstrated by appropriate examples.

References


Index Terms

Computer Science
Information Sciences
Keywords

Smoothing, Pruning, Entropy, Perplexity, Data Sparsity, Statistical Control, Information Retrieval.