

Deep Choice: A Deep Learning Approach to Consumer Choice

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Abstract

In this paper we propose a Deep Choice model to model consumer search and choice. Existing consumer search models focus mainly on a single attribute or a couple of attributes, but our architecture allows for high-dimensional input and it can handle different modalities. This allows examination of all information that is visible to consumers when making search and choice decisions. The model is tested on a dataset that was provided by a global online travel agency and it consists of search decisions when searching for hotels online. Our method improves prediction accuracy over traditional models. Our future efforts include improving explainability and we intend to address the debate about the trade-off between prediction accuracy and explainability, which is especially relevant for deep learning approaches.

Keywords: *Search Models; Choice Models; Deep Learning*

Track: Methods, Modelling & Marketing Analytics