

## Using Data-Driven Model on Online Customer Journey

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**Abstract :** Nowadays, customers can interact with firms through miscellaneous online ads on different channels easily. In other words, customer now has innumerable options and limitless time to accomplish their commercial activities with firms, individualizing their own online customer journey. This kind of convenience emphasizes the importance of online advertisement allocation on different channels. Therefore, profound understanding of customer behavior can make considerable benefit from optimizing fund allocation on diverse ad channels. To achieve this objective, multiple firms utilize numerical methodology to create data-driven advertisement policy. In our research, we aim to exploit online customer click data to discover the correlations between each channel and their sequential relations. We use LSTM to deal with sequential property of our data and compare its accuracy with other non-sequential methods, such as CART decision tree, logistic regression, etc. Besides, we also classify our customers into several groups by their behavioral characteristics to perceive the differences between all groups as customer portrait. As a result, we discover distinct customer journey under each customer portrait. Our article provides some insights into marketing research and can help firm to formulate online advertising criteria.

**Keywords :** LSTM, customer journey, marketing, channel ads

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