A Recommendation System to Enhance Midwives’ Capacities in Low-Income Countries

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Abstract

Maternal and child mortality is a public health problem that disproportionately affects low- and middle-income countries. Every day, 800 women and 5,700 newborns die from complications related to pregnancy or childbirth. For every maternal death, about 20 women suffer serious birth injuries. And for every maternal death, about 20 women suffer serious birth injuries. Maternal and child mortality is a public health problem that disproportionately affects low- and middle-income countries. Every day, 800 women and 5,700 newborns die from complications related to pregnancy or childbirth. For every maternal death, about 20 women suffer serious birth injuries. And for every maternal death, about 20 women suffer serious birth injuries. Maternal and child mortality is a public health problem that disproportionately affects low- and middle-income countries. Every day, 800 women and 5,700 newborns die from complications related to pregnancy or childbirth. For every maternal death, about 20 women suffer serious birth injuries. And for every maternal death, about 20 women suffer serious birth injuries. This is the aim of the Safe Delivery App, a digital job aid and learning tool implementation. A recommendation system that presents each midwife with suitable content to continue The App accommodates different learning sections grouped in modules. We have been using videos in different chapters and the drug section. Our strategy involves predictive modeling to foresee a user’s response to potential recommendations. For a certain content, the CTR is the rate at which a user would respond to a certain content that each user is more likely to check in the near future can be made more accessible. This would improve the user experience and accelerate the acquisition of critical skills. Here, we use the behavioral logs of the App to explore such a recommendation system, focusing instead on the dual input-aware reweighting could have some importance in the drug case. We focus on predicting if a user will check some specific content the next day, a problem we call click-through rate (CTR) prediction. Prediction models are typically trained on a labelled dataset of users’ interactions with a digital learning environment. This dataset was collected between 2016-07-01 and 2021-05-31 which included 20,532 users from India and Ethiopia. The App accommodates different learning sections grouped in modules. We focus on videos in different chapters and the drug section. Our strategy involves predictive modeling to foresee a user’s response to potential recommendations. For a certain content, the CTR is the rate at which a user would respond to a certain content that each user is more likely to check in the near future can be made more accessible. 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The models can be used to facilitate midwives’ everyday practice and skill acquisition, ultimately resulting in a better care for the mothers and babies they are assisting. Results show that the simple DeepFM architecture would suffice to address this content recommendation prediction problem in a production environment. This seems to indicate that explicitly considering high-order vector-wise feature interactions may not always be relevant in this particular problem in low-resource settings. The Safe Delivery App is an excellent example of how such a system can be implemented in a low-resource setting. Results have shown that state-of-the-art CTR prediction models can successfully predict whether a user will check a certain content or drug item within a certain time interval. This could be highly important for making content more accessible to the user. 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Method

We employed four different models and compared their performance: Product-based neural networks (PNN), DeepFM, xDeepFM and DIFM models. Here we focus on predicting if a user will check some specific content the next day, a problem we call click-through rate (CTR) prediction. Prediction models are typically trained on a labelled dataset of users’ interactions with a digital learning environment. This dataset was collected between 2016-07-01 and 2021-05-31 which included 20,532 users from India and Ethiopia. The App accommodates different learning sections grouped in modules. We focus on videos in different chapters and the drug section. Our strategy involves predictive modeling to foresee a user’s response to potential recommendations. For a certain content, the CTR is the rate at which a user would respond to a certain content that each user is more likely to check in the near future can be made more accessible. This would improve the user experience and accelerate the acquisition of critical skills. Here, we use the behavioral logs of the App to explore such a recommendation system, focusing instead on the dual input-aware reweighting could have some importance in the drug case. We focus on predicting if a user will check some specific content the next day, a problem we call click-through rate (CTR) prediction. Prediction models are typically trained on a labelled dataset of users’ interactions with a digital learning environment. The dual input-aware factorization machines (DIFM) model appears like the ideal candidate to be used in a recommendation system to predict user clicks on drug recommendations. Results have shown that state-of-the-art CTR prediction models can successfully predict whether a user will check a certain content or drug item within a certain time interval. This could be highly important for making content more accessible to the user. The models can be used to facilitate midwives’ everyday practice and skill acquisition, ultimately resulting in a better care for the mothers and babies they are assisting. Results show that the simple DeepFM architecture would suffice to address this content recommendation prediction problem in a production environment. This seems to indicate that explicitly considering high-order vector-wise feature interactions may not always be relevant in this particular problem in low-resource settings. The Safe Delivery App is an excellent example of how such a system can be implemented in a low-resource setting. Results have shown that state-of-the-art CTR prediction models can successfully predict whether a user will check a certain content or drug item within a certain time interval. This could be highly important for making content more accessible to the user. The models can be used to facilitate midwives’ everyday practice and skill acquisition, ultimately resulting in a better care for the mothers and babies they are assisting. Results show that the simple DeepFM architecture would suffice to address this content recommendation prediction problem in a production environment. This seems to indicate that explicitly considering high-order vector-wise feature interactions may not always be relevant in this particular problem in low-resource settings. The Safe Delivery App is an excellent example of how such a system can be implemented in a low-resource setting. Results have shown that state-of-the-art CTR prediction models can successfully predict whether a user will check a certain content or drug item within a certain time interval. This could be highly important for making content more accessible to the user. The models can be used to facilitate midwives’ everyday practice and skill acquisition, ultimately resulting in a better care for the mothers and babies they are assisting. Results show that the simple DeepFM architecture would suffice to address this content recommendation prediction problem in a production environment. This seems to indicate that explicitly considering high-order vector-wise feature interactions may not always be relevant in this particular problem in low-resource settings. The Safe Delivery App is an excellent example of how such a system can be implemented in a low-resource setting.

Results

The models produce highly accurate predictions.