Optimizing Human Language Learning

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Abstract. Learning foreign languages has become an essential skill in the globalized economy - English alone is estimated to have a total of 1.5 billion learners worldwide. As computer-based language learning apps increase in popularity, they generate vast amounts of student learning/behavioral data, opening up entirely new possibilities to optimize human language learning on an unprecedented scale.
In the first part of this talk, we introduce results from our user behavioral analysis and performance prediction projects using the learner data from Duolingo to find out the key traits of successful language learners. Secondly, we review some of the recent development to maximize second language learning through optimizing spaced repetition. Finally, we present the task of second language acquisition modeling (SLAM), which is a task to predict errors made by second language learners based on their past performance, along with some of the key findings from the SLAM shared task we hosted recently.

Keywords: Language learning · Spaced repetition · Second language acquisition modeling.