

Translation with Finite State Transducers

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Abstract

The accelerating rate of technological advancement and the ubiquitous globalization cause the importance of communication to grow. One of the underlying technologies enabling efficient communication is machine translation (MT) — automatically translating the interchanged information between the native languages of communicating parties. In this talk, we explore an MT algorithm utilizing a hierarchy of computationally-simple finite-state transducers. We will start with the core linguistic terms. The talk will continue to cover the inner workings of the translation process, including the underlying formal model of finite-state transducers and their use outside MT. We explore possible extensions of the core ideas, improving the results of the presented approach, such as augmenting the translation process with a language model. Moreover, we briefly discuss the history of machine translation, setting the presented approach into the historical context, including a short description of the state-of-the-art approaches to MT.