

## **Some approaches to statistical and finite-state speech-to-speech translation**

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### **Abstract**

Speech-input translation can be properly approached as a pattern recognition problem by means of statistical alignment models and stochastic finite-state transducers. Under this general framework, some specific models are presented. One of the features of such models is their capability of automatically learning from training examples. Moreover, the stochastic finite-state transducers permit an integrated architecture similar to one used in speech recognition. In this case, the acoustic models (hidden Markov models) are embedded into the finite-state transducers, and the translation of a source utterance is the result of a (Viterbi) search on the integrated network. These approaches have been followed in the framework of the European project **EU TRANS**. Translation experiments have been performed from Spanish to English and from Italian to English in an application involving the interaction of a customer with a receptionist at the frontdesk of a hotel.

**Author Keywords:** Speech-input translation; Statistical alignment models; Stochastic finite-state transducers