

Unwinding morphology

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In this talk we will explore formalizations of Raimy 2000 using simple extensions to finite-state machines relying on their representation as directed graphs. Raimy's theory is equivalent to Moore machines with changing priorities over the transitions; we also consider conversions to equivalent Mealy machines. A compact representational format is defined using dequeues (double-ended queues) and a linearization procedure is given by a variant of Dijkstra's algorithm: use the first available path from the front of the queue and then add it back to the end of the queue. Morphological operations add new paths to the front of the queue, giving priority to new morphological material, and allowing for compact and insightful representation of various morphological oddities such as reduplication, truncation, allomorphy and language games. This method also allows for morphological operations including truncation to be information-preserving within the morphology (i.e. prior to linearization).