SpokenMedia Project: Enabling Rich Media Notebooks for Learning and Teaching

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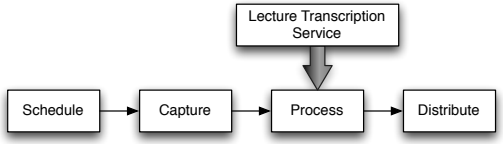
About the Project

The SpokenMedia project's goal is to increase the effectiveness of web-based lecture media by improving the search and discoverability of relevant media segments and enabling users to create rich media notebooks in which they interact with media segments in educationally relevant ways.

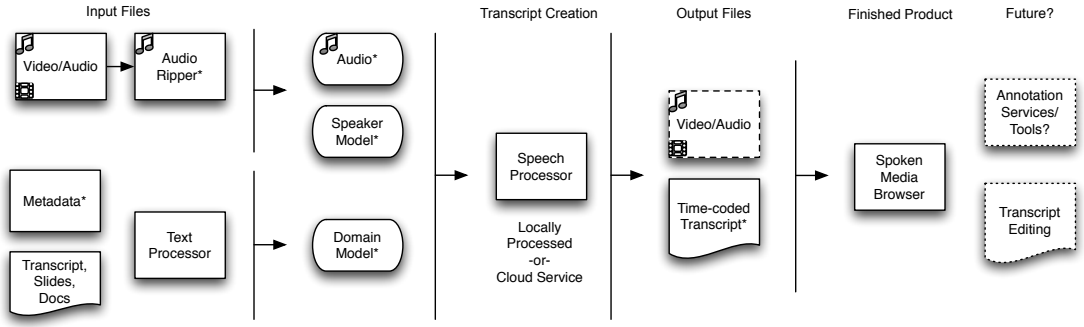


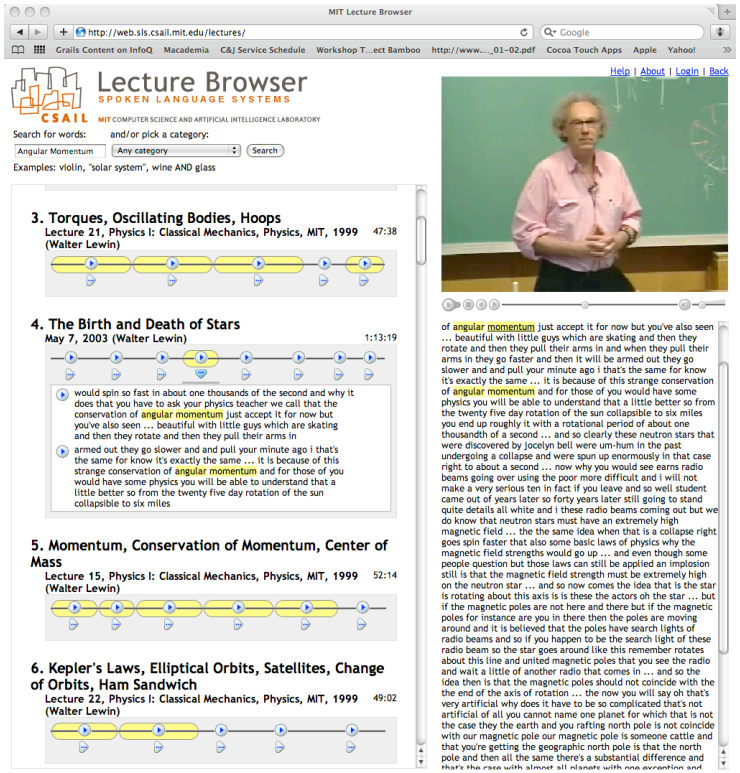
Part of a Podcast Producer Infrastructure

The system is envisioned as a service that can be integrated directly into individual campus podcasting solutions; the architecture of the system will be flexible enough to integrate with existing workflows associated with lecture recording systems, learning management systems and repositories.

How does it work?

The process for creating media-linked transcripts, as illustrated below, takes as inputs the lecture media, a domain model containing words likely to be used in the lecture, and a speaker model selected to most closely match the speaker(s) in the lecture. The output from the speech processor is an XML file containing the words spoken and their time codes. The time-coded transcripts and lecture media are brought back together and are viewable through a rich media browser.





Speaker Model

A personalized speaker model can be created for the lecturer that models his/her voice and accent. Previous research has shown that a personalized speaker model can increase the quality of the transcription up to 80-82% accuracy.

Domain Model

A domain model, created from slides, lecture notes, relevant research papers, etc, is necessary to provide the corpus of text that will be recognized from the speech recognition process. Well-formed domain models coupled with unique vocabularies can increase the quality of the transcription up to 91-93% accuracy.

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