

Automated Lecture Transcription

Enhancing Podcast Production Workflows

Andrew McKinney & Brandon Muramatsu

MIT

Office of Educational Innovation and Technology

John Zornig

University of Queensland

Centre for Educational Innovation and Technology

Citation: Muramatsu, B., Zornig, J., & McKinney, A. (2009). Automated Lecture Transcription.
Presented at the AcademiX Conference. Cambridge, MA. March 26, 2009.



Massachusetts Institute of Technology



Office of Educational
Innovation and Technology

This work is licensed under a Creative Commons Attribution-NonCommercial-ShareAlike 3.0 United States License (creativecommons.org/licenses/by-nc-sa/3.0/us)

Background

James Glass from CSAIL at MIT

- Created a system to automatically transcribe and index academic lectures
- Why?
 - Spontaneous speech (starts/stops, partial words, etc.)
 - Highly specialized subject-specific vocabulary
- Focus on processing to enable search and retrieval (display)



Massachusetts Institute of Technology



Office of Educational
Innovation and Technology

This work is licensed under a Creative Commons Attribution-NonCommercial-ShareAlike 3.0 United States License (creativecommons.org/licenses/by-nc-sa/3.0/us)

Background

- Developed workflow, processor and browser
 - ▶ web.sls.csail.mit.edu/lectures/
- Prototyped with lecture and seminar video/audio
 - MIT OpenCourseWare (~300+ hours of lectures)
 - MIT World (~80 hours of seminars)
- Supported with iCampus MIT/Microsoft Alliance funding for innovation in educational technologies



Massachusetts Institute of Technology



Office of Educational
Innovation and Technology

This work is licensed under a Creative Commons Attribution-NonCommercial-ShareAlike 3.0 United States License (creativecommons.org/licenses/by-nc-sa/3.0/us)

Towards a Lecture Transcription Service

Transition from research to a production service

- Develop prototype **production service**
 - MIT and UQ
- **Requirement gathering**
 - Internal (sample projects)
 - External (hosted service, community?)
- Community of practice/users?

MIT OEIT Projects

- OpenCourseWare
 - Subject domains, terminology
 - Search and retrieval
 - Facilitate translation (automated?)
 - Accessibility
- MIT 150th Anniversary Interviews
 - Highly accurate transcripts
 - Search and retrieval



Massachusetts Institute of Technology



Office of Educational
Innovation and Technology

This work is licensed under a Creative Commons Attribution-NonCommercial-ShareAlike 3.0 United States License (creativecommons.org/licenses/by-nc-sa/3.0/us)

University of Queensland

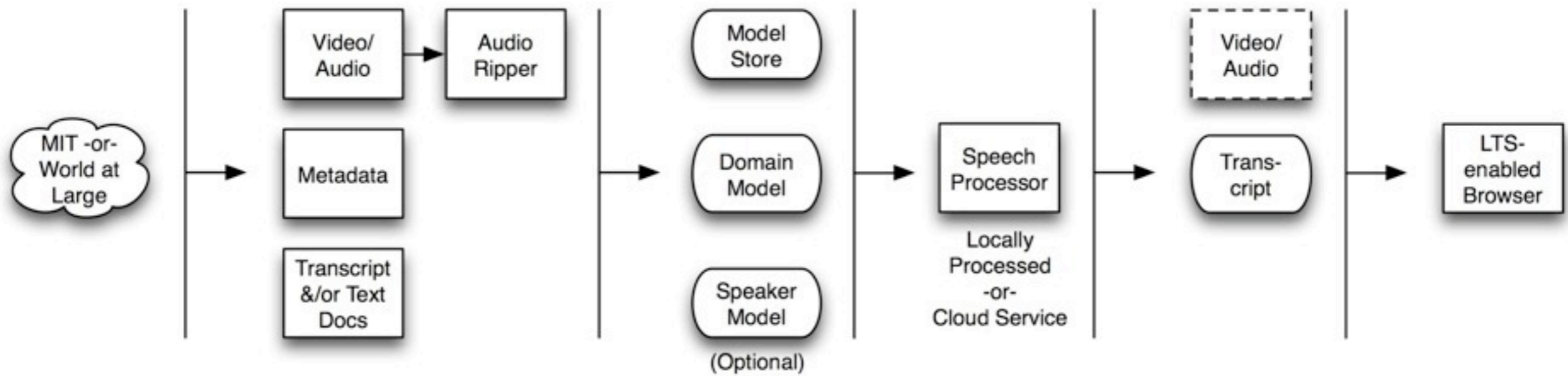


Massachusetts Institute of Technology

This work is licensed under a Creative Commons Attribution-NonCommercial-ShareAlike 3.0 United States License (creativecommons.org/licenses/by-nc-sa/3.0/us)



Office of Educational
Innovation and Technology



Lecture Transcription System Workflow



Massachusetts Institute of Technology



Office of Educational Innovation and Technology

This work is licensed under a Creative Commons Attribution-NonCommercial-ShareAlike 3.0 United States License (creativecommons.org/licenses/by-nc-sa/3.0/us)

Demos

- Spoken Lecture Browser
 - ▶ web.sls.csail.mit.edu/lectures/
- Google Audio Indexing
 - ▶ labs.google.com/gaudi



Massachusetts Institute of Technology



Office of Educational
Innovation and Technology

This work is licensed under a Creative Commons Attribution-NonCommercial-ShareAlike 3.0 United States License (creativecommons.org/licenses/by-nc-sa/3.0/us)

Thanks!

Andrew McKinney

mckinney@mit.edu

Brandon Muramatsu

mura@mit.edu

John Zornig

j.zornig@uq.edu.au

Citation: Muramatsu, B., Zornig, J., & McKinney, A. (2009). Automated Lecture Transcription.
Presented at the AcademiX Conference. Cambridge, MA. March 26, 2009.



Massachusetts Institute of Technology



Office of Educational
Innovation and Technology

This work is licensed under a Creative Commons Attribution-NonCommercial-ShareAlike 3.0 United States License (creativecommons.org/licenses/by-nc-sa/3.0/us)