

SpokenMedia

*Content, Content Everywhere...What video?
Where?: Improving the discoverability of OER
video and audio lectures*

Brandon Muramatsu

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Office of Educational
Innovation and Technology



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Recap: Matterhorn & SpokenMedia

Opencast & Matterhorn

Opencast = Community

Matterhorn = Project

“Process”

“Engage” (Use)



SpokenMedia

Community Member

External Participant
(Service)

Lecture Transcription

Discoverability
(Search),
New interactions

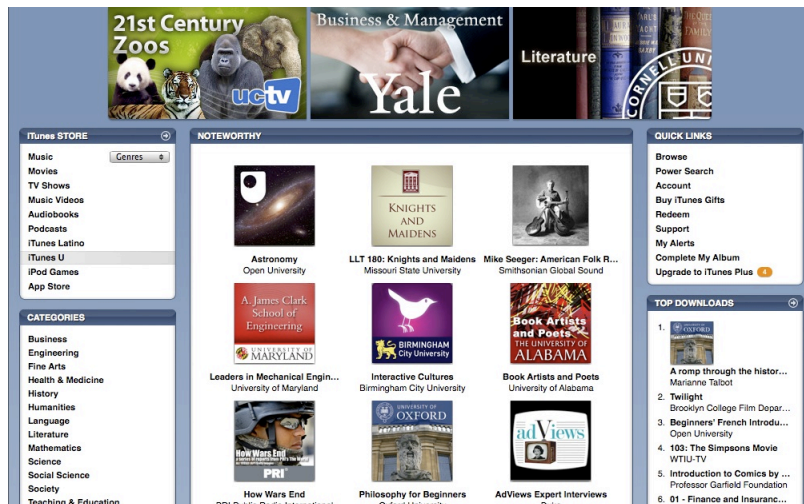
Why are we doing this?



[MIT OCW 8.01](#): Professor Lewin puts his life on the line in [Lecture 11](#) by demonstrating his faith in the Conservation of Mechanical Energy.

- More & more videos on the Web
 - Universities **recording** course **lectures**
 - **Students** (and universities) **relying** upon Web video for **learning**

What video? Where?



What are the challenges? Search

- Search
 - Volume
 - Segmented by Web, Video

Google Search for
“angular momentum”
Performed April 2009

The screenshot shows a Google Video search interface. At the top, there are navigation links for Web, Images, Maps, News, Video, Gmail, and more. The search bar contains the text 'angular momentum'. Below the search bar, there are options to search for 'all videos' or 'videos playable on Google'. The search results are displayed in a list on the left, with each entry showing a thumbnail, title, duration, and upload date. The top result is 'Caltech: The Mechanical Universe - 19 - Angular Momentum' with a duration of 28:51 and a rating of 5 stars. To the right of the list, a larger view of the selected video is shown, displaying a frame from the video which appears to be a historical document or book page with the word 'DRAGONIA' visible. Below the video frame, there is a description of the video and a link to watch it on video.google.com.

What are the Challenges? Description

- Description
 - Course and Lecture Title
 - Summary
 - Metadata?

YouTube, MIT OCW Physics 8.01 - Lecture 20
webcast.berkeley, Physics 8A, 002, Spring 2009
Retrieved August 2009


The screenshot shows a YouTube page for the MIT OCW Physics 8A, 002 - Introductory Physics course. The page is titled "Physics 8A, 002 - Introductory Physics" and lists the instructor as Joel FAJANS. The page also includes a Creative Commons license and a list of 10 lectures. The course title and the list of lectures are circled in red.

| Lecture | Date |
|------------|-------------|
| Lecture 1 | Tue, Jan 20 |
| Lecture 2 | Thu, Jan 22 |
| Lecture 3 | Tue, Jan 27 |
| Lecture 4 | Thu, Jan 29 |
| Lecture 5 | Tue, Feb 03 |
| Lecture 6 | Thu, Feb 05 |
| Lecture 7 | Tue, Feb 10 |
| Lecture 8 | Thu, Feb 12 |
| Lecture 9 | Tue, Feb 17 |
| Lecture 10 | Thu, Feb 19 |

Link this page  BOOKMARK   ...

Would you like to put a link to this lecture on your homepage?
Go ahead! Copy the [HTML snippet](#) !

Reviews and comments:

 1 Arihant Sogani, October 21, 2008 at 5:53 p.m.:
Helpful in understanding from a different point


Write your own review or comment:

Name
Email address
URL
Comment


Preview


Lecture rating


People found this lecture:


Worth seeing 

because it is:

Valuable and informative 

Well presented 

Easily understandable 

Acceptably recorded 

You need to [login](#) to cast your vote.

Report a problem or upload files

If you have found a problem with this lecture or would like to send us extra material, articles, exercises, etc., please use our [ticket system](#) to describe your request and upload the data.
Enter your e-mail into the 'Cc' field, and we will keep you updated with your request's status.

Related content

See Also

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Visitors who watched this lecture also watched...



Lecture 19: Rotating Rigid Bodies – Moment of Inertia
– Parallel Axis and Perpendicular Axis Theorem
– Rotational Kinetic Energy
– Fly Wheels – Neutron Stars
– Pulsars

Walter H. G. Lewin

 2 comments

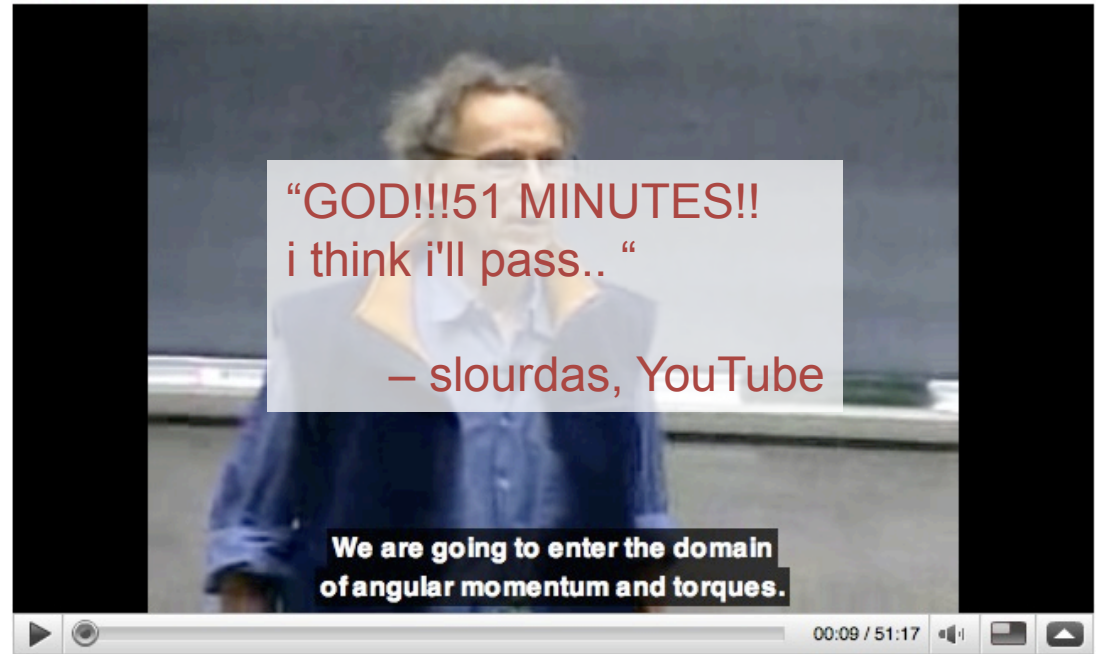


Lecture 21: Torques – Oscillating Bodies – Hoops
Walter H. G. Lewin

What are the challenges? Use

- Interaction & Use
 - Full video vs. segments
 - Transcripts / captions
 - Do they exist?
 - What's the cost?

Lec 20 | 8.01 Physics I: Classical Mechanics, Fall 1999



Lewin, W. (1999). Lec 20 | 8.01 Physics I: Classical Mechanics, Fall 1999.
Retrieved August 1, 2009 from YouTube Website:
<http://www.youtube.com/watch?v=ibePFvo22x4>

Why are we interested?

- **Improve search** and retrieval
- What do we have?
 - Existing videos & audio, new video
 - Lecture notes, slides, etc. (descriptive text)
 - Multiple videos/audio by same lecturer (scale)
 - Diverse topics/disciplines
- **Improve presentation and user experience**
- Captioning for accessibility
- Facilitate translation, other uses?



Lecture Browser

SPOKEN LANGUAGE SYSTEMS

MIT COMPUTER SCIENCE AND ARTIFICIAL INTELLIGENCE LABORATORY

Search for words: and/or pick a category:

angular momentum

Any category

Search

Examples: violin, "solar system", wine AND glass

50 results for angular momentum

1. Angular Momentum, Torques, Conservation of Angular Momentum, Spinning Neutron Stars, Stellar Collapse

Lecture 20, Physics I: Classical Mechanics, Physics, MIT, 1999 (Walter Lewin)

51:05



- ▶ we're now answering the part of eight oh one which is the most difficult for students and faculty alike ... we are going to enter the domain of angular momentum and forks it's extremely non intuitive ... the good news however is that b will stay with this concept for at least four five lectures today i will
- ▶ the good news however is that b will stay with this concept for at least four five lectures today i will introduce both fork an angular momentum ... what is angular momentum if an object has a mass m ... and it has a velocity v ... then clearly it has a momentum ... v that's very well defined your reference frame the product of m and v ... thank the momentum ... i can take relative to any point i choose i choose this point q arbitrary ... this now ... is the position
- ▶ this now ... is the position vector which i call our of q ... but this angle buffet to ... an angular momentum relative to that point q it's a vector or ... is the position vector relative to that point q cross p

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we're now answering the part of eight oh one which is the most difficult for students and faculty alike ... we are going to enter the domain of angular momentum and forks it's extremely non intuitive ... the good news however is that b will stay with this concept for at least four five lectures today i will introduce both fork an angular momentum ... what is angular momentum if an object has a mass m ... and it has a velocity v ... then clearly it has a momentum ... v that's very well defined your reference frame the product of m and v ... thank the momentum ... i can take relative to any point i choose i choose this point q arbitrary ... this now ... is the position vector which i call our of q ... but this angle buffet to ... an angular momentum relative to that point q it's a vector or ... is the position vector relative to that point q cross p ... so it is our of q ... cross v ... and then ... times m ... the magnitude ah of the angular momentum relative to point q ... is of course are $m v$ that then i have to take the sine of the angle ... so let's say b is $m v r$ sine fate a and this i often call short hand notation are perpendicular ... that ... are perpendicular is the systems relative to point c ... what you just saw may have confuse you infer could reason because i change by index q to see and there is no see ... the index is should all be q of course ... so these are is the length of this vector is the magnitude of this vector

web.sls.csail.mit.edu/lectures

Spoken Lecture Project

James Glass
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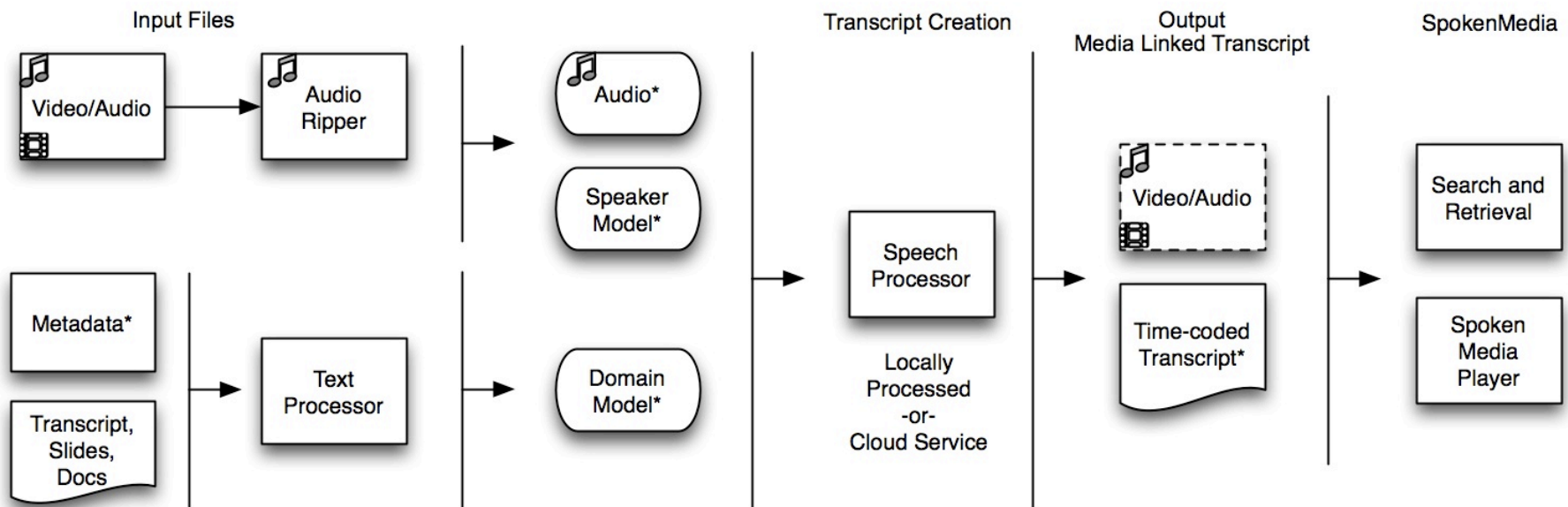


- Research in spoken language
- Why **lectures**?
 - Conversational, spontaneous, starts/stops
 - Different from broadcast news, other types
 - Specialized vocabularies
- **Processor, browser, workflow**
- Prototyped with lecture & seminar video

Supported with iCampus MIT/Microsoft Alliance funding

How Does it Work?

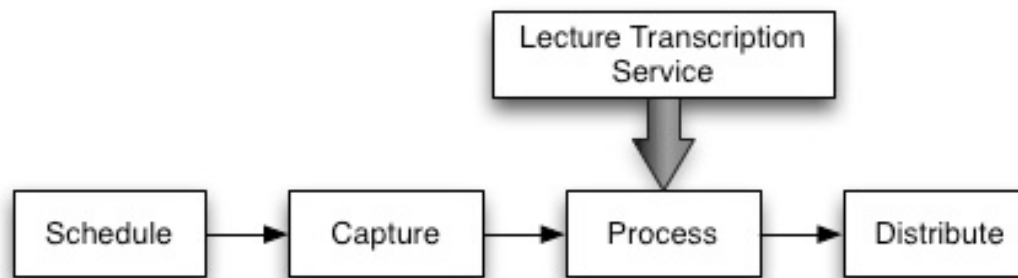
Lecture Transcription Workflow



Transition: Research to Production

A Lecture Transcription Service

- Prototype **transcript production** service
 - At MIT, University of Queensland
 - Automate processes
 - Integrate with media production workflows



- Engage with **content** (video) producers to **test**
 - UC Berkeley, Harvard, etc.
 - Opencast Matterhorn

A Lecture Transcription Service?

Caveats

- Lecture-style content (technology optimized)
- Approximately 85% accuracy (probably not a full accessibility solution)
- Other languages? (not sure)
- Processing hosted at MIT (current thinking)
 - So will submit jobs via MIT-run service
 - Contribute audio extract, models, transcript for further research

Toward Rich Media Notebooks

Improving the User Experience

- Upgrade playback (Flash, H.264 encoding)
- Improved interfaces
 - Bookmarking and annotation
 - Clip creation and authoring
- Social Editing (improve transcripts)
- Concept and semantic searching
 - Semi-automated creation of concept vocabularies

Thanks!

oeit.mit.edu/spokenmedia

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