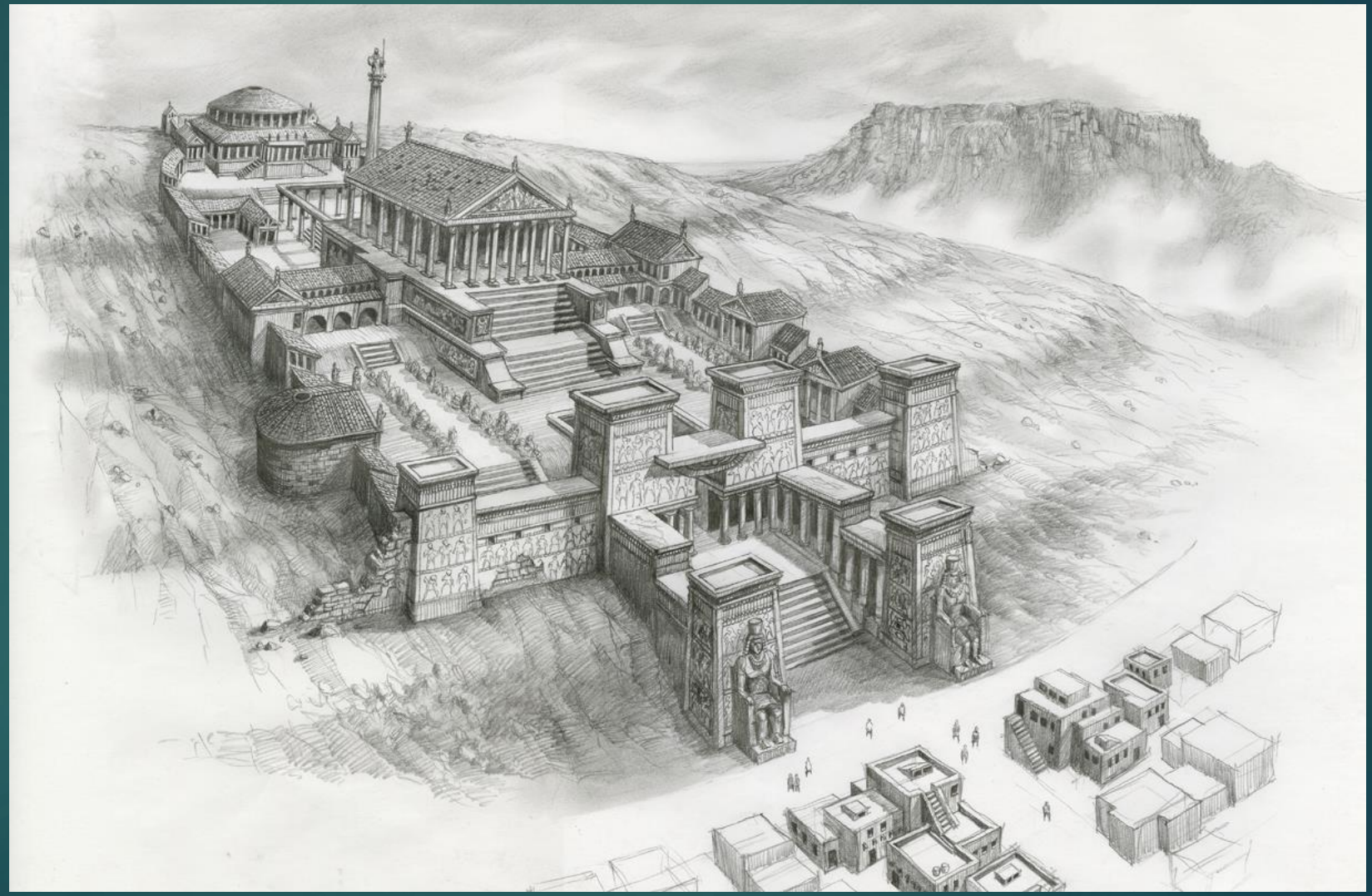
Project Factor

SPEECH TO TEXT – INNOVATING AND INTEGRATING WITH DATA

Library of Alexandria



Why?

- Libraries were the controlled center of knowledge for the entire history of mankind!
- Until the digital age…
- Currently the online services groups in universities have become the defacto center for knowledge
- But to them – the data they control or that knowledge is a burden to store and archive
- They throw it away every 1 to 1.5 years on average!
- Wouldn't it be great if we have a place and a group that were experts in categorizing, searching, retrieving, and presenting this data to those who are looking for it?

We do…

- It is called the library…

Project Factor Proposal

- Factor is a software framework
  - The main goal is to take text from speech (video or audio) and convert it to raw text that users can manage and mark up
- Why bother?
  - Users can correct the failures of machine translation
  - Users can then provide full English transcripts for subtitles and ADA use
  - Users can mark up unstructured text and share it with others in a library
  - Users can search the gathered text and make custom books from content scattered across departments and even years of lectures.
  - Users can also search via keywords to find video as well as text

What are the components?

- Speech to text engine – using an opensource library called Sphinx from Carnegie Mellon University
- Project Convert
  - Note… they are already using this library for a transcript purpose for some of their own courses
  - Transcript also provides timestamp which is used in the next project
- Project Window Pane
  - This is the interface that allows the user to view video (similar to blackboard) and simultaneously edit the text transcript
- Project Marker
  - This portion allows a user to enter a drag and drop application and mark unstructured text via a simple GUI interface.
  - Code is rendered into a DocBook or HTMLBook format which allows for export to PDF, HTML, Docbook, and even ePub
  - PDF and HTML formats can be printed too – making real-time books

Factor components

- Project SH-3
  - This is a meta portion of the project that deals with raw data storage and preparing data for archiving and retrieval.
- Project Promised Land
  - This is the search engine portion
  - Aggregates all the searchable text transcripts
  - Uses Lucene (an opensource indexing tool that prepares data for searching)
  - Uses Solr (an opensource webcrawler that a user would search from)
  - Uses Hadoop (just for data storage)

What is the current state?

- We have a working prototype of each part
  - But parts have not been integrated
  - There is a summer course in the ITM department where we will be working on taking the prototypes to a beta development.
- We are also working with Psychology department
  - They will help with the gami-fication and the user editing portion of the transcript
- I plan to talk to Techcomm
  - Professor Karl Stolley
  - Professor Matt Bauer (speech guy not the CS one)

What is the library's role?

- Help with licenses
  - Can all the content be placed under creative commons?
  - If so which one?
  - Will the university have an issue?
  - Are there intellectual property issues?
- Funding
  - Are there research grants for a product like this? IMLS? Mellon foundation? ADA?
  - How would one apply? Where would one look?
- Way down the road
  - Management and shepherding of the project?

Questions?

- Questions and comments?
  - Resources and prototypes publically available here