San Francisco State University

CSC664-01

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Automatic Event-Based Grouping and Interaction with Personal Multimedia Information

Presentation Itinerary

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Contents

1 Dataset and GUI Requirements

1.1 Dataset

Our dataset was derived from custom downloaded family event albums from flickr with the original timestamps. We also included our own photos in order to capture all the raw metadata files can have- both temporally(datetime) and spatially(lat, lon) We manually tagged our flickr dataset with geo-coordinates for usage in our multimedia system

1.2 GUI Functional Requirements

User Operation List

Operation	I/O
Insert Media	{MMO}, event
Create Empty Event	{}->event
Create Event(manual)	{MMO}->event
Create Events using a cluster algorithm	{MMO} -> {event}
Remove Event	{MMO}
Attach Event	{event},event
Detach from super-event	{event}, super-event

2 Design

2.1 Library Gallery: An overview of all multimedia files to be sorted as events

- mimetypes like 'image/jpeg' categorize all multimedia into distinct categories making it easier to make queries with filetype

2.2 Universal Media Player:

For a few media types, we use 3rd party libraries, for the majority however, we used standard libraries that pre-exist within our codebase.

Media Types	
application	
audio	Various Audio-Processing Libraries for Audio-based event-annotation
image	standard html, css, and js libraries
message	stl
multipart	stl
text	stl
video	stl

2.3 Timeline: Temporal Clustering based off of different classes of Event-Relations

LIVE-DEMO:

- Point-Point Relations
- Point-Interval Relations
- Interval-Interval Relations

2.4 GPS Event Display:

- Estimating Spatial Realms for Events based off of Multimedia Sets Calculating a set of points and nonconvergent lines Methodology, Issues, Solutions
- Powered by GoogleMaps
  - For rapid prototyping purposes, events are clustered into an 'average' set of coordinates and then displayed fed and displayed onto the GoogleMaps world viewer

2.5 Media Annotation Tool:

Our Media Annotation Tool is split into 2 parts

- A simple and interactive way to create CRUD operations on EXIF data for temporal and spatial data.

Multimedia-Processing Libraries

- FacialDetection functionality to tag certain people
- AudioProcessing to tag important data like meeting subject times

2.6 Event-Detail and Event-Hierarchy Display

An interactive medium to modify events and their position and status within their event-hierarchy

3 Experimentation: Demonstrating Design Efficacy and Event-Clustering through Experimentation

3.1 Experimentation

3.1.1 Effectiveness of Time-Based Clustering to Define Events

3.1.2 Usefulness of the proposed interactions for users in managing information

3.1.3 Qualitative and Quantitative results

- Likert Scales, Questionnaires, and Surveys
- Empirical measurements of access complexity via motions/time
- Estimate the NASA Task Load Index score for various environments