Storytelling Using EventWeb

Ramesh Jain
Department of Computer Science
Today’s Story

- Changing Paradigms in computing
- What drives the latest computing paradigm
- Events and Objects
- EventWeb
- Storytelling using EventWeb
- EMME
- Going forward
Disruptive Stages in Computing
Disruptive Stages in Computing

Data (Computation)

Data:
- Numbers
- Text
- Statistics
- Sensors (Video)
Disruptive Stages in Computing

Information (Communication)

Data (Computation)

Data:
- Numbers, Text, Statistics, Sensors (Video)

Information:
- Search, Specialized sources
Disruptive Stages in Computing

What Next?

Data
(Computation)

Information
(Communication)

Data:
Numbers, Text,
Statistics, Sensors (Video)

Information:
Search, Specialized sources
Disruptive Stages in Computing

Experience (Insights)

Information (Communication)

Data (Computation)

Data:
- Numbers, Text, Statistics, Sensors (Video)

Information:
- Search, Specialized sources

Experience:
- Direct observation or participation
Three Stages in Computing

<table>
<thead>
<tr>
<th>FEATURE</th>
<th>Stage 1</th>
<th>Stage 2</th>
<th>Stage 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Input</td>
<td>Sci Bus Data</td>
<td>Documents</td>
<td>Multimodal</td>
</tr>
<tr>
<td>Output</td>
<td>Math results</td>
<td>Information</td>
<td>Experience</td>
</tr>
<tr>
<td>Processing</td>
<td>Procedural</td>
<td>OO</td>
<td>Event &amp; Obj</td>
</tr>
<tr>
<td>Driving Device</td>
<td>Mainframe, WkStations</td>
<td>PCs, Internet</td>
<td>Mobile phones</td>
</tr>
<tr>
<td>Applications</td>
<td>Computing</td>
<td>Info &amp; Comm</td>
<td>Insights</td>
</tr>
<tr>
<td>User level</td>
<td>Trained Prof</td>
<td>Dev. World</td>
<td>and Experience</td>
</tr>
<tr>
<td>Interaction</td>
<td>Cmd lang</td>
<td>GUI</td>
<td>All Humans</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Experiences</td>
</tr>
</tbody>
</table>

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Name 3 most popular Internet companies that emerged in the last 3 years.
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- Flickr
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- Flickr
- YouTube
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- Flickr
- YouTube
- Facebook/Myspace
Name 3 most popular Internet concepts in the last 3 years.
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- Tags
Name 3 most popular Internet concepts in the last 3 years.

- Blogs
- Tags
- Groups/Social Networks
Interesting!!!

- Flickr
- YouTube
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- Blogs
- Tags
- Groups/SNtwks
Interesting!!!

- Flickr
- YouTube
- Facebook/Myspace
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- Groups/SNtwks

What message does this give us?
Message: People want
Message: People want

- New media: Text based media is not enough.
Message: People want

- New media: Text based media is not enough.
- Story Telling: People want to express themselves using easy tools.
Message: People want

- New media: Text based media is not enough.
- Story Telling: People want to express themselves using easy tools.
- Socialize: Family and friends remain a strong influence in all facets of life – people want to share stories with them.
Continuing the Evolution of the Web

- **DocumentWeb**
  - Each node is a ‘Page’ or a document.
  - Pages are linked through *referential links*
Continuing the Evolution of the Web

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- Consider a Web in which each node
Continuing the Evolution of the Web

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- Consider a Web in which each node
  - Is an event
Continuing the Evolution of the Web

- **DocumentWeb**
  - Each node is a ‘Page’ or a document.
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- Consider a Web in which each node
  - Is an *event*
  - Has informational as well as *experiential data*
Continuing the Evolution of the Web

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    - *Referential links*
    - *Structural links*
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    - Referential links
    - Structural links
    - Relational links
Why Events?

- In many applications most data and information is related to events.
- Event based (Temporal and Spatial) organization is a fundamental mechanism used by people.
- People organize information and experiential data around events.
- Events are natural in storytelling.
Objects and Event

- Object oriented approaches are good for dealing with STATIC situations.
- Emerging applications must deal with
  - DYNAMIC situations
  - Experiential data
  - Relationship and transitions
- Objects and Events are strongly related and must be used to support each other.
- Events offer a strong model to develop insights in many applications.
Data, **Information**, and **Insight**

- **What**: Which thing or which particular one
- **Who**: What or which person or persons
- **Where**: At or in what place
- **When**: At what time

- **How**: In what manner or way; by what means
- **Why**: For what purpose, reason, or cause; with what intention, justification, or motive
## Insights require understanding Relationships

<table>
<thead>
<tr>
<th></th>
<th>Object</th>
<th>Location</th>
<th>Time</th>
<th>Relationships</th>
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</thead>
<tbody>
<tr>
<td><strong>What</strong></td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td><strong>Who</strong></td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Where</strong></td>
<td></td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>When</strong></td>
<td></td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td><strong>How</strong></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td><strong>Why</strong></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
</tbody>
</table>
Different Facets of an Event

- Structural Facet
- Temporal Facet
- Informational Facet
- Causal Facet
- Experiential Facet
- Spatial Facet
Events Happen

1-dimensional Space
Events Happen

1-dimensional Space
EventWeb
1-dimensional Space
Story Telling
Story Telling

Present right event information using right media in right order.
Story Telling

Stories are sequence of events.

- Text
- Movies
- Drama

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Must have information about events
- You know all relevant events
- Have appropriate information
- In right media

Present right event information using right media in right order.
Story Telling
1-dimensional Space

Time

Photo

Text

Video
Initially we start with Visual media – first photos then video – and then we will bring in other types.
EMME: Experiential Media Management Environment

- Will deal with complete Media-ecosystem
  - And the design is to include other media very soon.
- Will ingest Media from all sources – cameras to web.
- Will digest Media for you
- You decide how you want to share
- Browse and search
- Presentations
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Initial Implementation using Photos.
Novel Approach

- Event-based
- Photo-taking is an event
- Photos are taken of an event
- Albums represent events and objects
- Presentations are to share and communicate experiences
**Examples:** Photos are Assigned tags only based on EXIF

<table>
<thead>
<tr>
<th>Images</th>
<th>Classes Predicted</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="https://via.placeholder.com/150" alt="Image" /></td>
<td>Outdoor Night, People in Restaurants, Theater, Stage Show, Talk By Speaker, Portrait at Night, Public Indoor Places</td>
</tr>
<tr>
<td><img src="https://via.placeholder.com/150" alt="Image" /></td>
<td>Daily Life Indoors, Furniture, Party at Day, View of Rooms, Group Photo, People in front of Building</td>
</tr>
<tr>
<td><img src="https://via.placeholder.com/150" alt="Image" /></td>
<td>Fireworks, Moonlight Scene, Night Illumination, Group of People Outdoor Night, Sports, Scenery</td>
</tr>
<tr>
<td><img src="https://via.placeholder.com/150" alt="Image" /></td>
<td>Daily Life Outdoors, Poster/Whiteboard, Sunset, Street in City, Public Places Outdoors, Outdoor Parties, Outdoor Decorations/Sculpture, Architecture, People in front of Buildings</td>
</tr>
<tr>
<td><img src="https://via.placeholder.com/150" alt="Image" /></td>
<td>Street, Public Places Outdoors, Sky, outdoor decorations, Architecture, Theater, People in Public Places</td>
</tr>
<tr>
<td><img src="https://via.placeholder.com/150" alt="Image" /></td>
<td>Daily Life Indoors, Signboard, View of Rooms, Slides/displays, Group of People, People in Public Outdoor Places</td>
</tr>
</tbody>
</table>
Photo Stream to Events

Ingestor

Atomic Events in EventBase

Event Segmentation
Event Annotation

- After automatic event segmentation, a user may refine it or annotate it in many different ways:
  - Name
  - People in it
  - Sub events
  - Related events.
Spatial Browsing

Figure 9: The location view of events
Figure 10: The timeline view of events
Figure 11: Authoring of multimedia presentations

Ritesh's London Trip 2006
Going Forward
Going Forward

- Events have played important role in history – Now they can play important role in computer representation of history.
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We have an early version of EventWeb – event representation, linking, and all Web 2.0 tools.
Going Forward

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- We have an early version of EventWeb – event representation, linking, and all Web 2.0 tools.
- EMME is one example.
- We are applying this to other examples:
  - Deep History
  - Environmental
Thanks for your time and attention.

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