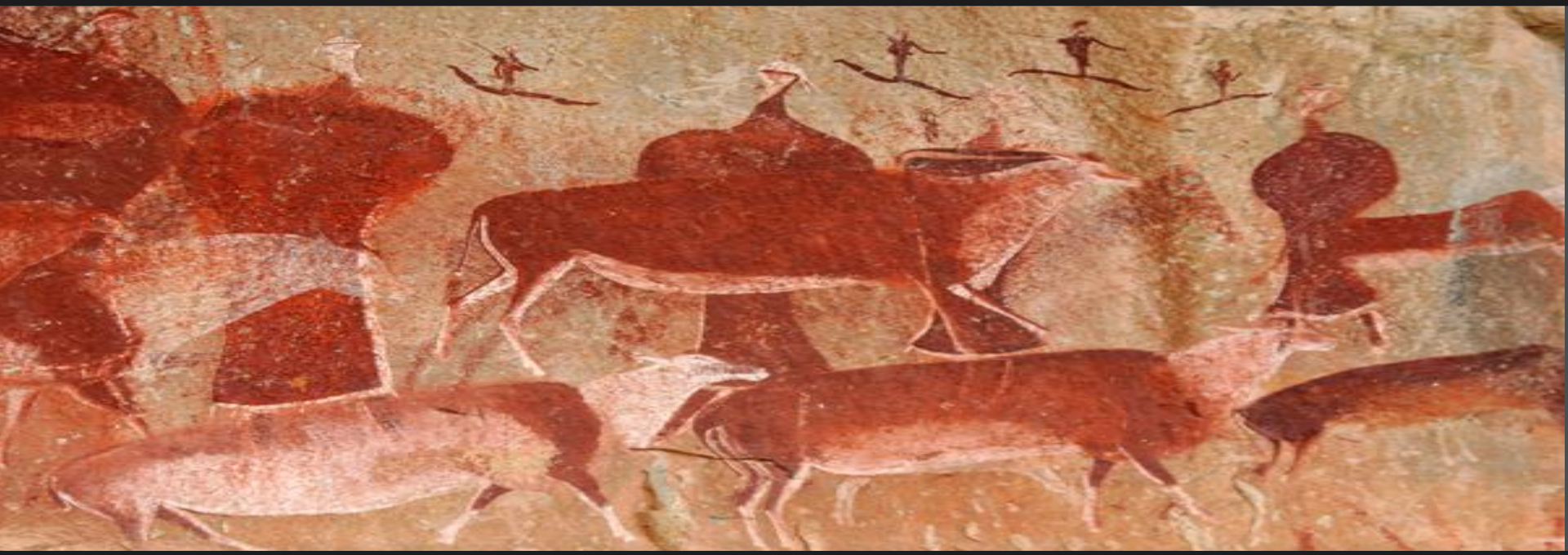
Heritage and Learning:

An Online Rock Art Education Tool



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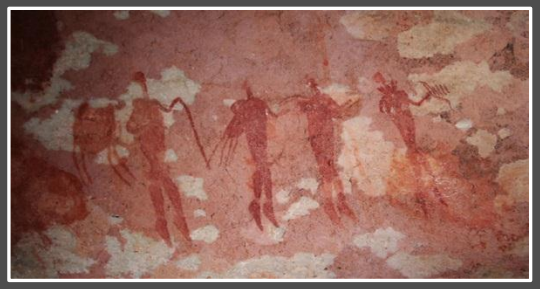
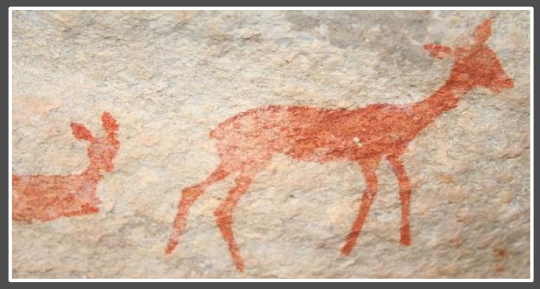
Supervised by: Hussein Suleman

Statement of the Problem

The Department of Archaeology has large amounts of information pertaining to rock art in South Africa.

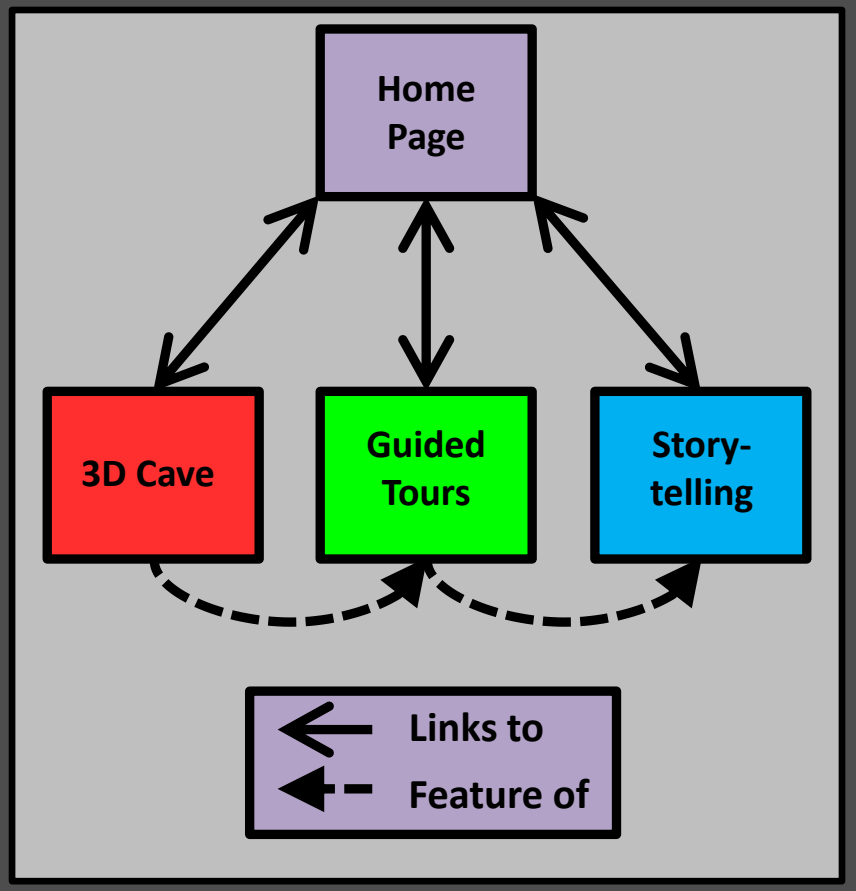
This information could be used to educate the public about the importance of rock art.

A database was constructed using the data. However, it does not provide a visual and easy to navigate view of the information.

Solution

- 3D cave visualization
- Guided tours
- Storytelling



Work Allocation

Kaitlyn	Marco	Joanne
3D Cave visualization	Guided Tours	Storytelling

All Members
Web based system linking each section

3D Cave Visualization

Laser scans from the Department of Geomatics

Images and metadata from the Department of Archaeology

Research Question

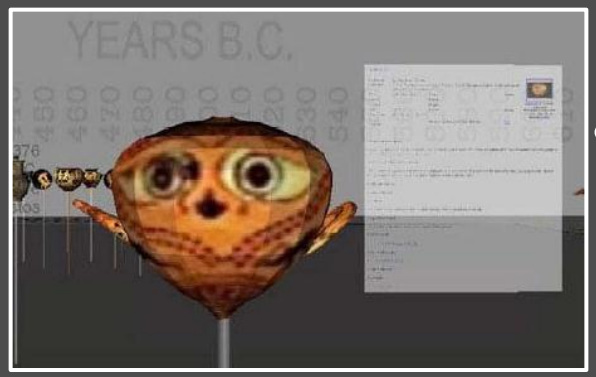
Is it possible to build a usable and useful 3D cave navigation system to encourage learning about rock art?

Will investigate this by building:

- 3D Visualization from database and laser scans
- where users can navigate through the caves and information at the same time
- and which can be used by other systems to pre-program routes

Background

- LVis
  - good navigation
  - Virtual Reality (CAVE)



- 3D Vase Museum
  - Good navigation and context preservation

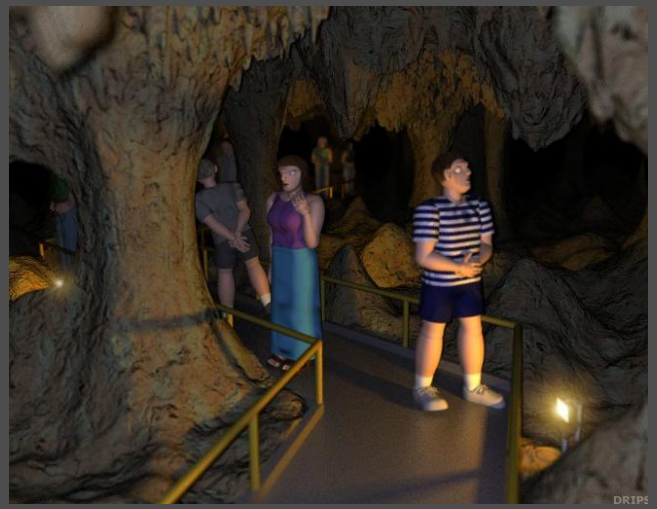
- Columbia University project on situated media
  - Augmented Reality

Solution

- 3D Visualisation
  - Overlaying information from the database on cave models
- Navigation
  - Use traditional 3D techniques to navigate the physical and information space
- Web-based
  - Using WebGL

Evaluation

- Usability
  - users given tasks to perform
  - E.g. Navigate to the campfire areas



Guided Tours

Navigate the website being developed.

A structured approach for any other user to navigate the system.

This way the information is presented in a systematic and interesting way.

Research Question

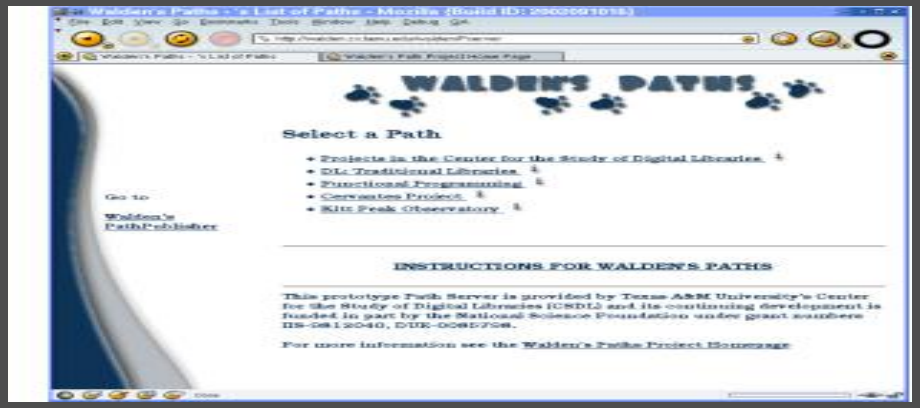
Is it possible to build a usable and useful guided pathway system to promote learning and learning design?

Will investigate this by building:

- a navigable system
- where users can go on guided tours of rock art sites
- and view information related to them,
- as well as build their own tours.

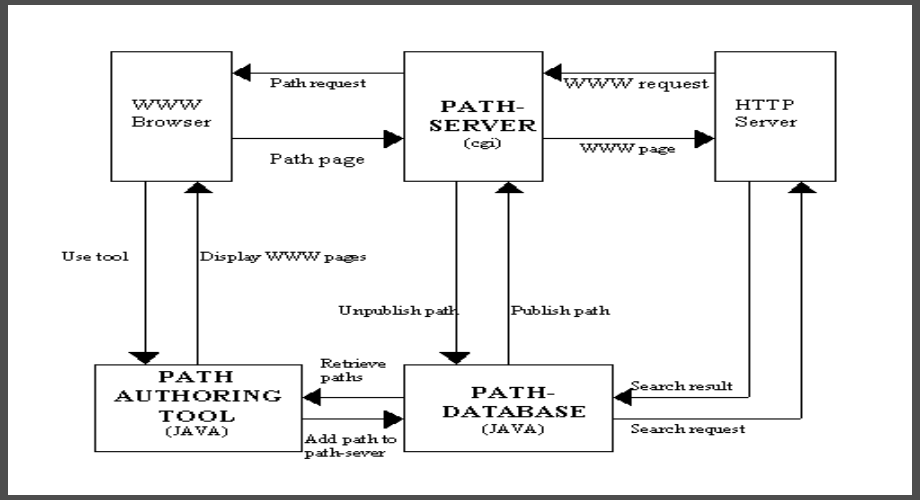
Background

Walden's Paths – a guided path solution



A path is a flow of information within hypertext

Useful in Education



Solution

- Similar to:
  - Travelling salesman – NP-complete
  - Topological Sort

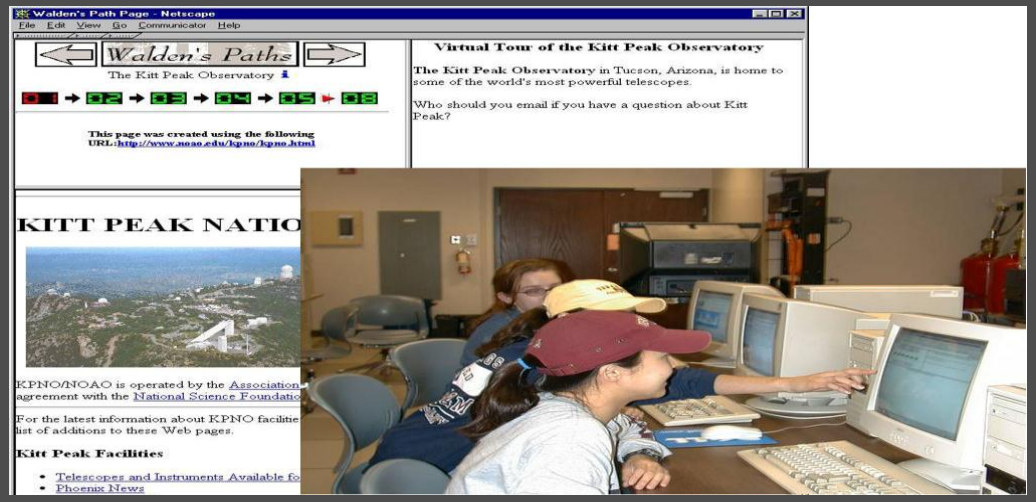
- Path finding algorithm

- Sub-problem: Cluster nodes (sites) then find the path within each site

- JQuery

Evaluation – User Testing

- Navigating the system while performing certain tasks that exploit all the features of the guided path
- User Experience: feedback will greatly influence the final design



Storytelling

South Africa has a rich heritage of oral tradition

There are a large number of San tales; Different tales, as well as different versions and variants

Many of these tales can be related to and make use of the images depicted in the San rock art

Research Question

Is it possible to build an engaging and dynamic storytelling environment to encourage learning about rock-art?

Will investigate this by building:

- a storytelling environment
- where users can read indigenous stories, particularly those pertaining to the San people,
- and which makes use of rock art images.

Background

Digital storytelling: Modern form of the ancient art of storytelling.

It can take many forms, such as:

- A collection of still images, joined and overlaid with a voice narrative
- Text Web pages
- Website
- Song
- Video
- Game
- Virtual reality world

Solution

Basic View

Collage View

Audio version of some of the stories if available or can be created

Use of ambient sounds to enhance the storytelling experience

Integration with the guided tour feature

Evaluation – User testing

- User experience testing will be done on the system
- Users will go through various stories
- An evaluation will be conducted on their overall experience

Timeline

Deliverables	Date
Initial feasibility study	23 July 2012
First prototype	31 August 2012
User testing	7 September 2012
Final prototype	31 September 2012
User testing	7 October 2012
Final write up	31 October 2012

Conclusions

Our overall aim is to create a product that will:

- Educate users and
- Aid preservation of heritage
- Using the tools outlined above