

# MexCulture142

June 21, 2018

## 1 Technical parameters

‘MexCulture142’ dataset [1] contains images of Mexican Cultural heritage recorded during ANR PI Mexculture by IPN CITEDI and gaze fixations data recorded with an eye-tracker at LABRI UMR 5800 CNRS/University of Bordeaux/IPN. The goal of psycho-visual experiment is to record gaze fixations of subjects executing a visual task of recognition of architectural styles of Mexican Culture heritage.

The classes of styles are Prehispanic, Colonial, Modern.

Each category of images represents the views of the same building.

The dataset contains 142 classes of Prehispanic, Colonial, Modern styles, we provide 2 examples for each class and the corresponding .txt fixation files. Also, it contains the saliency map images of each image and .txt scanpath files where we have the coordinates and durations of fixations.

Number of categories	142
Number of images per category	2
<b>Total images</b>	<b>284</b>

To recognize the architectural styles of Mexican buildings, the participants observe the images of the building on the screen. Each image is viewed for 3 seconds, then a gray screen is shown to re-initialize their attention.

Time for image displaying	3 seconds
Time for gray frame displaying	1 second
Time for calibration:	60 seconds
Time to read instructions	180 seconds
<b>Total time:</b>	<b>28 minutes (~ 30 minutes)/participant</b>

Thus, for a group of 23 participants, taking 30 minutes per participant, the experience should take 11.5 hours. This experience can be done in 6 sessions.

The gaze fixations were recorded at 250 Hz with Cambridge research systems high-speed VET recording fixation of one eye.

The age of participants was  $23.7 \pm 2,8$  years old. The educational level was graduate and PhD students.

## 2 Copyrights and citations

The project was supported by University of Bordeaux/ LABRI UMR 5800 CNRS/University of Bordeaux/INP and IPN - CITEDI under the CONACYT PhD grant. When using the data please cite "Visual Content Indexing and Retrieval with Psycho-Visual Models", Jenny Benois-Pineau, Patrick Le Callet, Eds., Multimedia Systems and Applications book series (MMSA), Springer International Publishing AG, 2017, 267 p.

## 3 Details of the content

The dataset contains 4 folders:

**-images:** contains 142 categories of Prehispanic, Colonial, Modern styles, provide 2 examples for

each category.

**-fixations:** holds .txt files which are the corresponding fixations of the images in images folder.

**-gazefixationsdensitymaps:** contains the woodings maps of each category which are calculated as in [2].

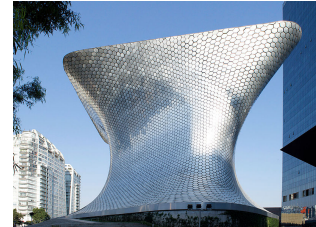
**-scanpaths:** includes 6532(284 × 23 participants) .txt files where we have the coordinates and durations of fixations.



(a) Prehispanic



(b) Colonial



(c) Modern

Figure 1: Architectural styles of Mexican Culture heritage

The format for each filename is the following:

Images: *SSS\_XXX\_YYY\_N\_#.png*

Fixations: *SSS\_XXX\_YYY\_GazeFix\_N\_#.txt*

Gazefixationsdensitymaps: *SSS\_XXX\_YYY\_GFDM\_N\_#.png*

ScanPath: *SSS\_XXX\_YYY\_ScanPath\_N\_#\_P\_\*.txt*

Where:

"SSS" is the architectural style

"XXX" the name of the building

"YYY" the location (state), required because we have the same name for some buildings in different states in Mexico.

"#" is the sample number and for scanpaths "\*" gives the participant number.

Here some examples:

*Prehispanic\_Yaxchilan\_Chiapas\_N\_2.png*

*Prehispanic\_Yaxchilan\_Chiapas\_GazeFix\_N\_2.txt*

*Prehispanic\_Yaxchilan\_Chiapas\_GFDM\_N\_2.png*

*Prehispanic\_Yaxchilan\_Chiapas\_ScanPath\_N\_2\_P\_1.txt*

## References

- [1] A. Montoya Obeso, J. Benois-Pineau, M. S. García Vázquez and A. A. Ramírez Acosta, "Saliency-based selection of visual content for deep convolutional neural networks. Application to architectural style classification" in *Journal of Multimedia Tools and Applications*, Springer, 2018.
- [2] DAVID S. Wooding "Eye movements of large populations:II. Deriving regions of interest, coverage,and similarity using fixation maps" in *Behavior Research Methods, Instruments, & Computers*,2002.