# Event Boundary Detection Code

## Important Functions/Classes

* CPhotoProcess
  + *Decription:* Load all user photos in imageDir, and load existing event segmentation info(in xml format), split all the photos into two part: photos need event segmentation and photos do not.
  + *Parameters:* imageDir, directory of the path of user’s photos.
* Presegment
  + *Description:* segment the whole collection into sub-collection based on boundary score in PhotoTOC[1], on condition that only less than 2000 photos in less than 30 days in each sub-collection.
  + *Parameters:* photos, vector of all the photo features.
* CCluster.Clustering(use\_gps)
  + *Description:* use adaptive Gaussian Mixture Model to segment photos in the sub-collection into sub-events based on time and location(optional)[2].
  + *Parameters:* use\_gps,If we incorporating GPS information to do the segmentation.
* CCluster.MergeEvents2Scale && all functions in NewCluster.cpp
  + *Description:* get the global statistics of all the sub-events, then merge sub-events into meaningful events based on these global features.
  + *Parameters:* fPhotos, feature of all photos; fEventIdx, sub-event index of the photos; threshold: similarity threshold to determine if merge two sub-events into one events; timeK && gpsK: to control the granularity of time && location in each event.
* EvaluateSegment
  + *Description:* Get the performance of the segmentation result (precision, recall, F-score, AlbumItemCountSurplus).
  + *Parameters:* user must separately put photos of each event into a specific sub-folder under user’s folder.

## References

[1] John C. Platt , Mary Czerwinski , Brent A. Field. PhotoTOC: Automatic Clustering for Browsing Personal Photographs (2002).

[2] Xu Shen, Xinmei Tian. Multi-modal and multi-scale Photo Collection Summarization. MTAP. 2015.