**Concept**

Photo slideshow is a popular method to demonstrate a set of photos. It often covers a main topic and tell people some particular stories. However, a photo may contain rich information so that audiences’ attentions could be distracted when watching a slideshow. By smoothly connecting similar objects or characters (i.e., common object) in a photo slideshow, audiences’ attentions could be effectively attracted toward them. Our idea is to emphasize these objects or characters by smoothly connecting and transiting them between images.

**System**

When using our method to convey sequences of photos, users tend to move their attention from the whole photos to the main characters and objects. We will improve the usability of the presentation method and extend the system to handle multiple common objects.

**Path optimization**

We synthesize and interpolate a set of frames between neighboring keyframes, and obtain a series of frames. The positions and scales of all the frames are calculated such that the defined energy function is minimized.

\[
E_d = \frac{1}{|P|} \sum_{P_i \in P} \sum_{j=0}^{3} \left\| \hat{p}_{c_i} + \hat{s}_i \Delta v_i - \bar{v}_i \right\|^2 \\
E_s = \frac{1}{|F| - 2} \sum_{t=2}^{|F|-1} \left( \left\| \hat{p}_c^{t-1} - 2\hat{p}_c^{t} + \hat{p}_c^{t+1} \right\|^2 + \left\| \hat{s}_c^{t-1} - 2\hat{s}_c^{t} + \hat{s}_c^{t+1} \right\|^2 \right)
\]

**Comparison**

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<thead>
<tr>
<th></th>
<th>Ours</th>
<th>Blend</th>
<th>Face Movie</th>
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<tbody>
<tr>
<td>Fun</td>
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<td>Smooth</td>
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<td>Information</td>
<td>O</td>
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**Conclusion**

Given a set of photos $P$ in an user specified order and an example object image $I$, we first exploits the local self-similarity descriptors to extract the common objects $C$ from $P$ that have similar shapes with the example Object.