**What is multi-duration saliency?**

- **Rich, robust** representation of attention over time
- Has the generalizability of a population-level metric
- Contains temporal information
- Easy to collect and crowdsource

**Data collection**

We use the CodeCharts interface to collect gaze fixations at precise viewing durations.

We collect saliency data at 0.5, 3, and 5 seconds.

**CodeCharts1k**

Introducing CodeCharts1k, the first multiduration saliency dataset.

**Applications**

- **Captioning**
  - Focus a captioning module on content that is salient at different durations

- **Rendering**
  - Prioritize content to render based on order in which it is salient

- **Cropping**
  - Generate image thumbnails/summaries tailored to a certain duration

**Results**

<table>
<thead>
<tr>
<th>Model</th>
<th>NSS</th>
<th>CC</th>
<th>KL</th>
</tr>
</thead>
<tbody>
<tr>
<td>SAM-MD</td>
<td>2.050</td>
<td>0.798</td>
<td>0.548</td>
</tr>
<tr>
<td>MD-SEM</td>
<td>2.739</td>
<td>0.753</td>
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<tr>
<td>MD-SEM</td>
<td>2.915</td>
<td>0.765</td>
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*SALICON split into different durations for pre-training*

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*SALICON-MD*

**The Temporal Excitation Module**

- Produces multiple saliency maps with fewer params than comparable models.
- Compresses feature maps
- Applies iterative alterations with an LSTM
- Maps back into the original dimensionality
- Excites each channel of the original feature maps

**The CCM Loss**

We calculate the Correlation Coefficient (CC) for pairs of ground truth maps and pairs of predicted maps, and we minimize their difference.

**Captioning**

- Captioning module focused on salient content

**Rendering**

- Prioritize content to render based on saliency

**Cropping**

- Generate image summaries tailored to a certain duration

**Temporal patterns in face saliency**

- **The boomerang pattern:** Attention moves away from faces at 3s and back to faces at 5s.
- **The decreasing pattern:** Attention on faces decreases at 3s and again at 5s.

**Introducing CodeCharts1k**, the first multiduration saliency dataset.