VisualNet: Semantic Commonsense Knowledge-base for Visual Applications

by

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VisualNet Structure

N: sky
Location
Space

V: fly, wing
SubEvent
Work
Achievement

N: airplane, aeroplane, plane
Event
Space

Motion
Relativity
Sematic Levels

- Number of approaches
- Psycho-Category
- Scenario (Story)
- Events
- Objects and Actions
- Low-Level features

Knowledge needed: Complexity
Framework

Stage 1: Relations Filtering
- ConceptNet

Stage 2: Nodes Analysis
- Stage 2

Stage 3: Nodes Expansion
- WordNet
- Nodes Pysco-Tagging

Stage 4: LIWC
- VSL Net

Visually non-related text units
Application

- A car gains speed (0.6)
- Aeroplane taking off (0.53)
- A tennis gain (0.3)
- A plane lifts off (0.27)
- Aeroplane, plane, airplane $S = 1.2$
- Automobile, car $S = 0.6$
- Tennis $S = 0.3$
- Take off, lift off, $S = 1.2$
- Accelerate, gain speed $S = 0.6$

{aeroplane, plane, airplane} is {take off, lift off}
## Results snapshot

<table>
<thead>
<tr>
<th>Video</th>
<th>Annotations</th>
<th>Weights</th>
<th>Composed Annotation</th>
<th>Categories</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1.jpg" alt="Video" /></td>
<td>manoeuvre (v)</td>
<td>1</td>
<td>volleyball play</td>
<td>Leisure</td>
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<tr>
<td></td>
<td>gambling (n)</td>
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<tr>
<td></td>
<td>toy (n)</td>
<td>1</td>
<td>leap gambling</td>
<td>Nil</td>
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<td>spring (v)</td>
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<td>domestic dog chase</td>
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<td>chase (v)</td>
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Thanks

Questions?