Occlusion–Aware Visual Object Tracking to Handle Complex and Persistent Occlusions

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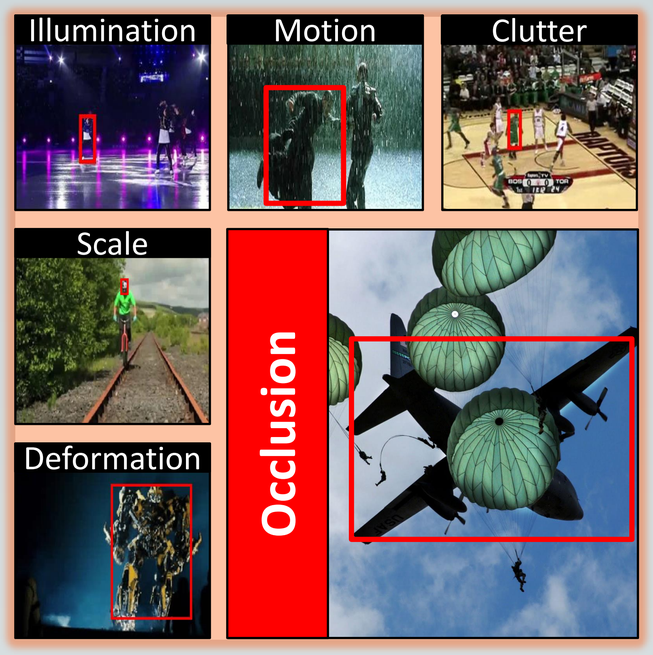
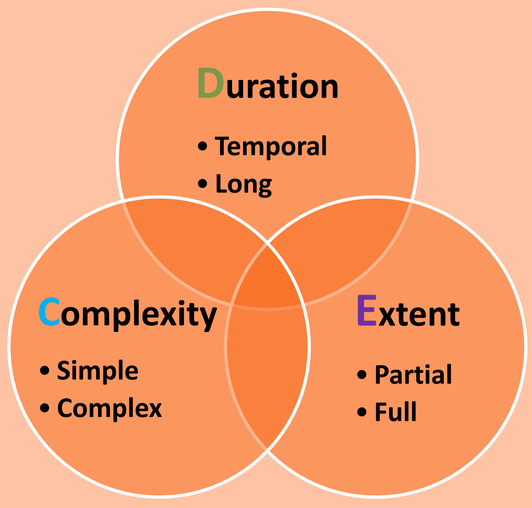
TRACKING CHALLENGES



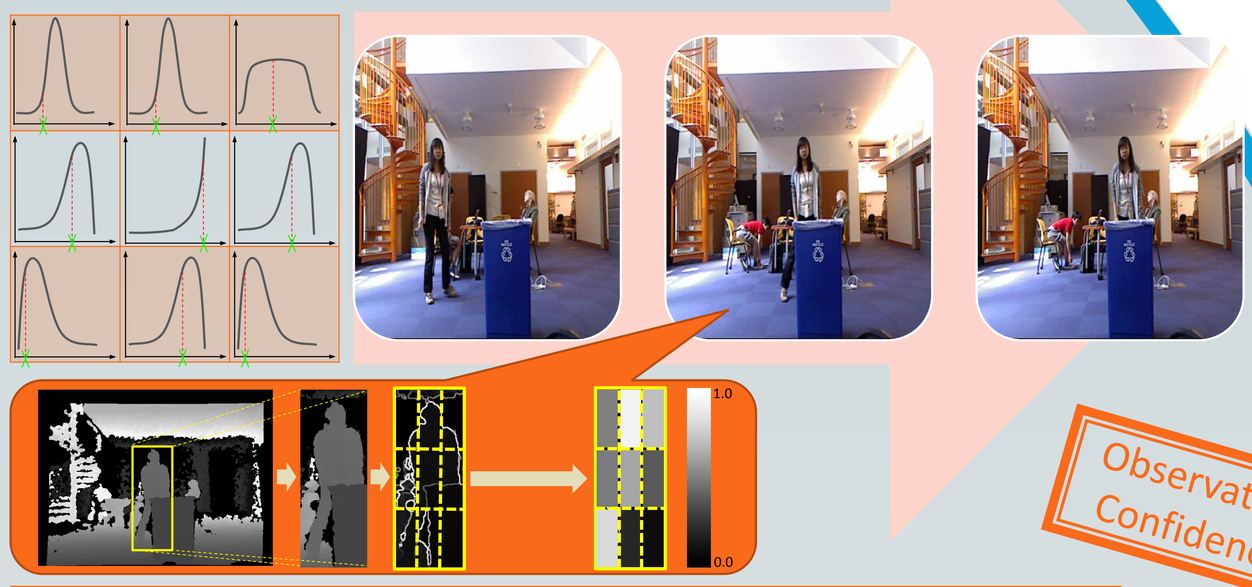
TRACKING APPLICATIONS

OCCLUSION TYPES



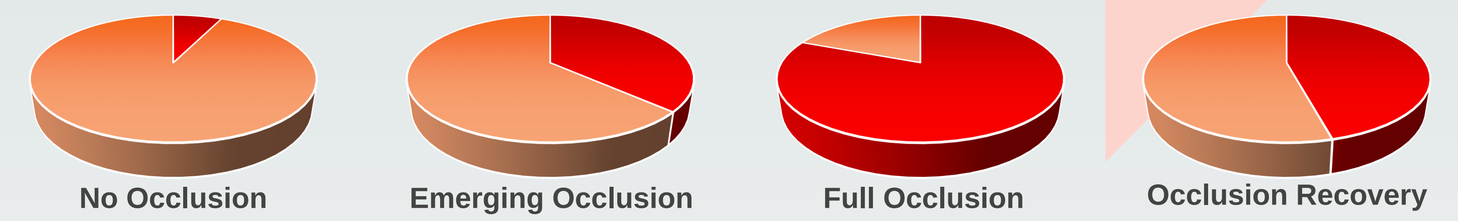
HANDLING PARTIAL OCCLUSIONS

Learning an Observation Mask from data
Undermining the impact of occluded parts of the template



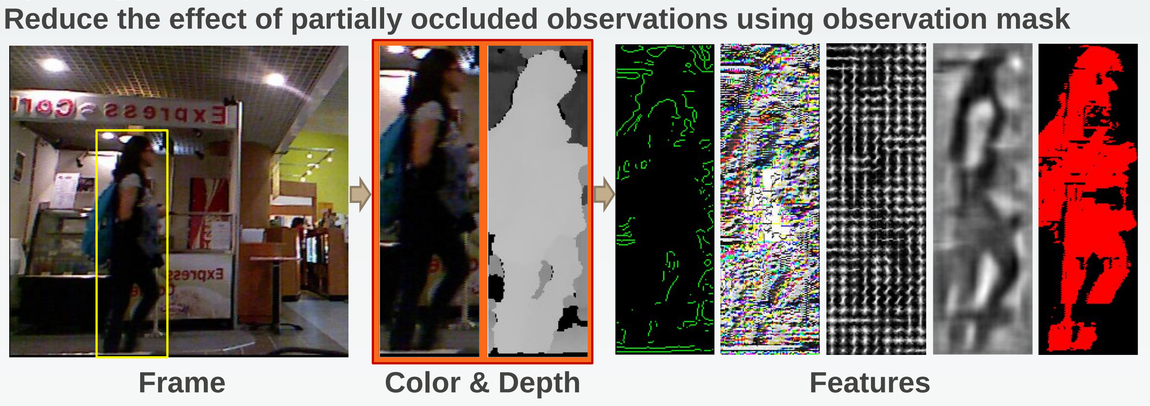
HANDLING FULL OCCLUSIONS

Switching Sampling Method and Motion Model of Candidates between:
- Template Matching Particles that keep track of target
- Occlusion Detecting Particles that expand search area for occluded target

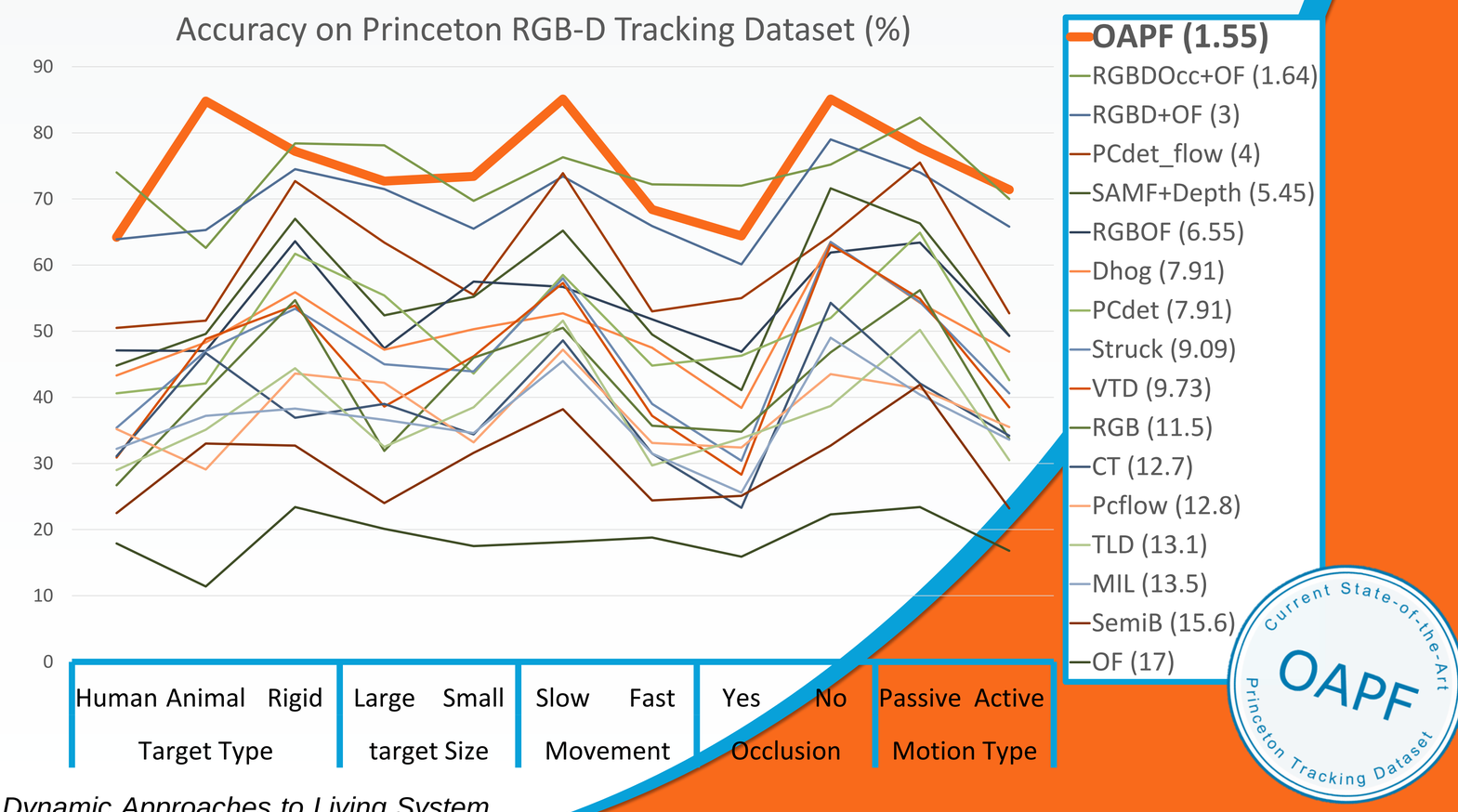


EMPLOYING MULTIPLE FEATURES AND SMART UPDATE

Fusing multiple Features from Color and Depth domains
Updating the template only when no occlusion is detected
Reduce the effect of partially occluded observations using observation mask



RESULTS



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URL: http://ishiilab.jp/member/meshgi-k/oapft.html