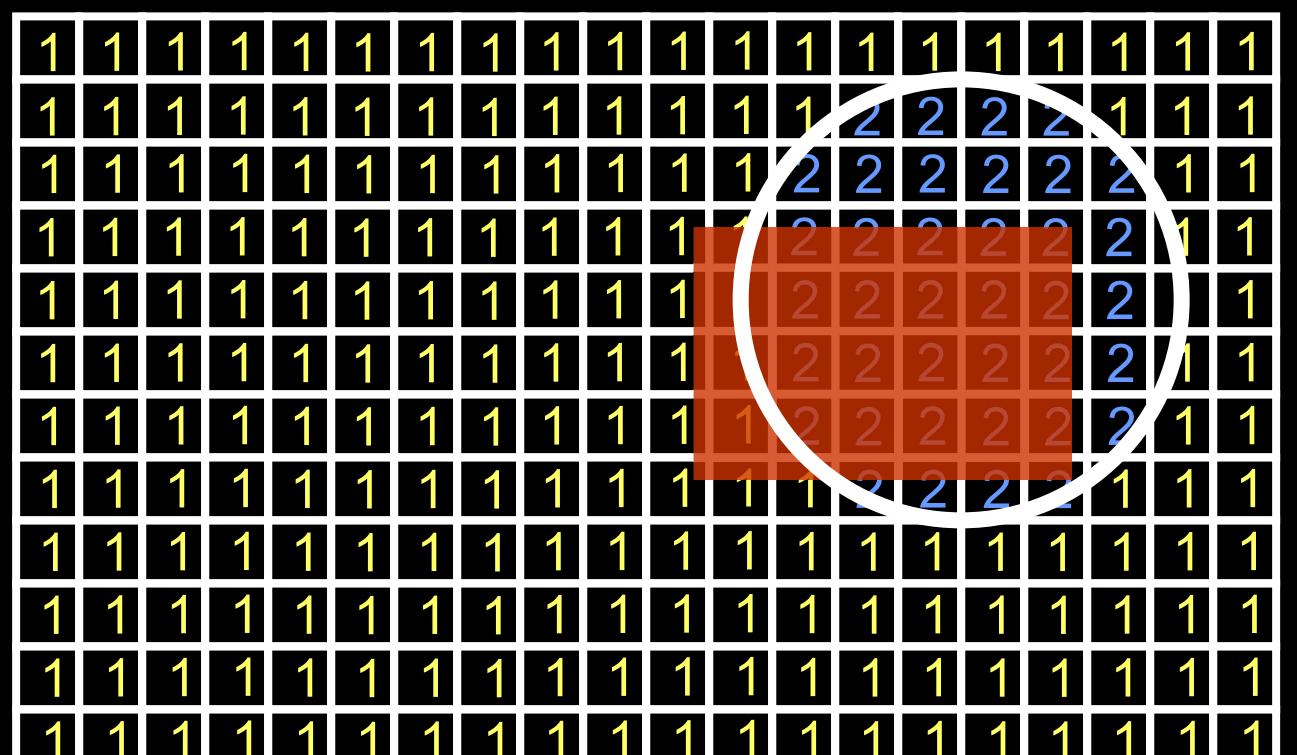
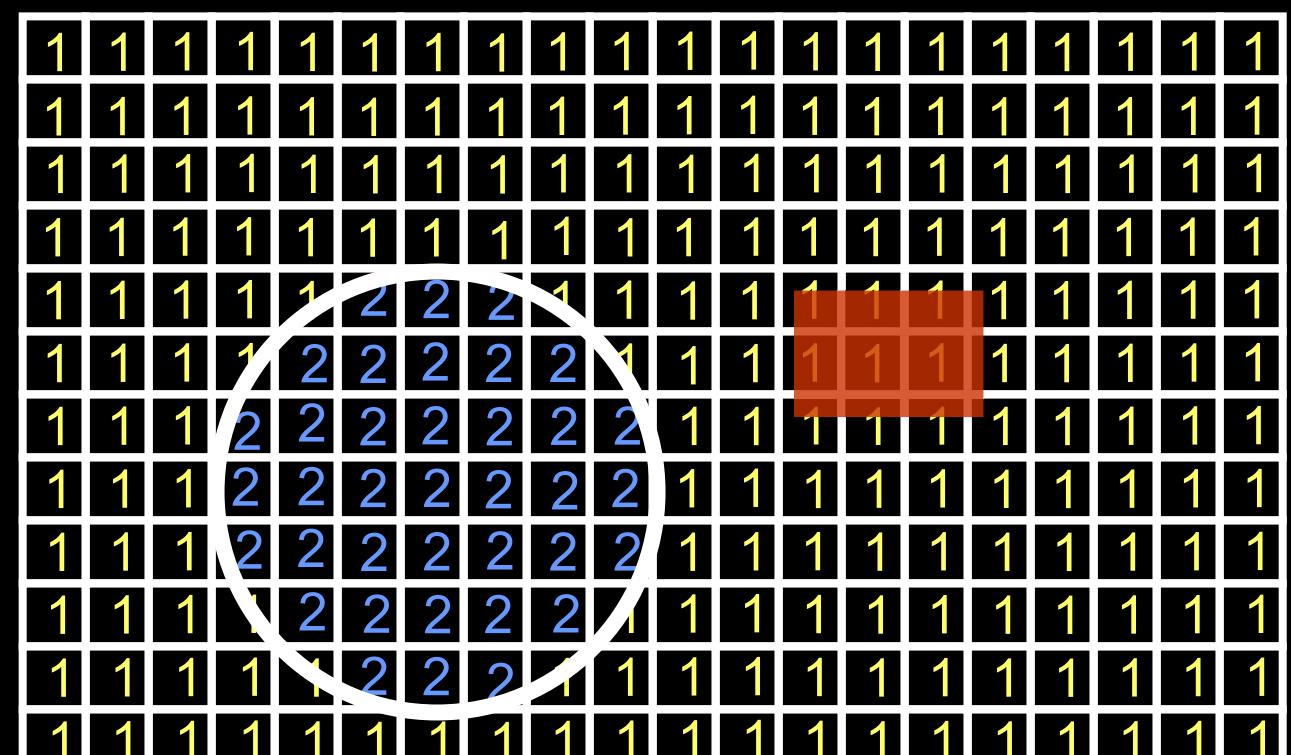


Mobile Spatial Tools for Fluid Interaction

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Fluid Control of Interface Properties using i-Buffers

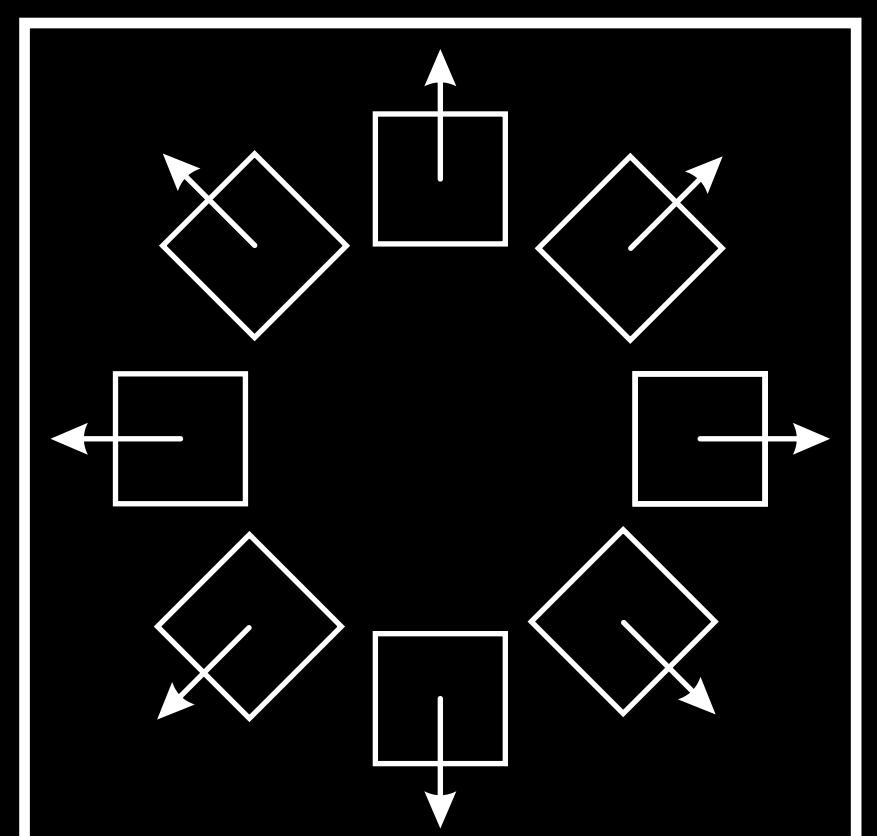
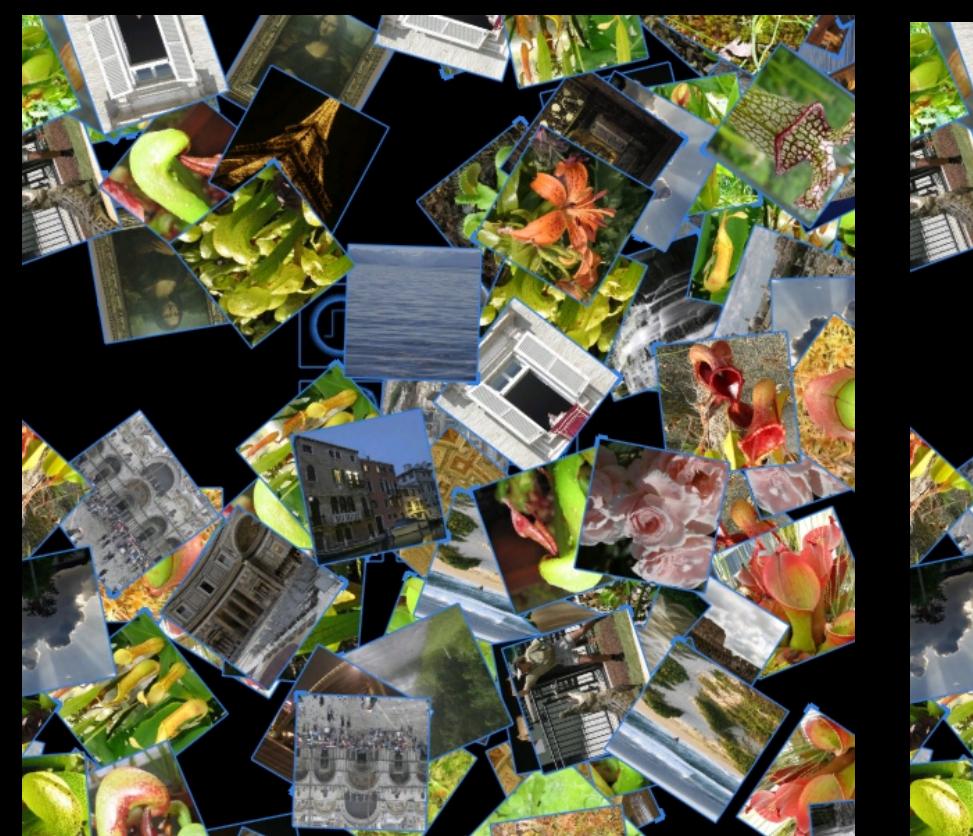


Spatially explicit control of interface properties (in this example the object size) with i-buffers: objects look up values or value changes of their properties in sampled buffers, thus object control does not require selection anymore. Tools can have temporal or permanent effects, are mobile but can also be used stationary, can have arbitrary shapes, can use attenuation to cause gradual changes, and are typically used as the top-most layer of the interface to allow interaction with them.

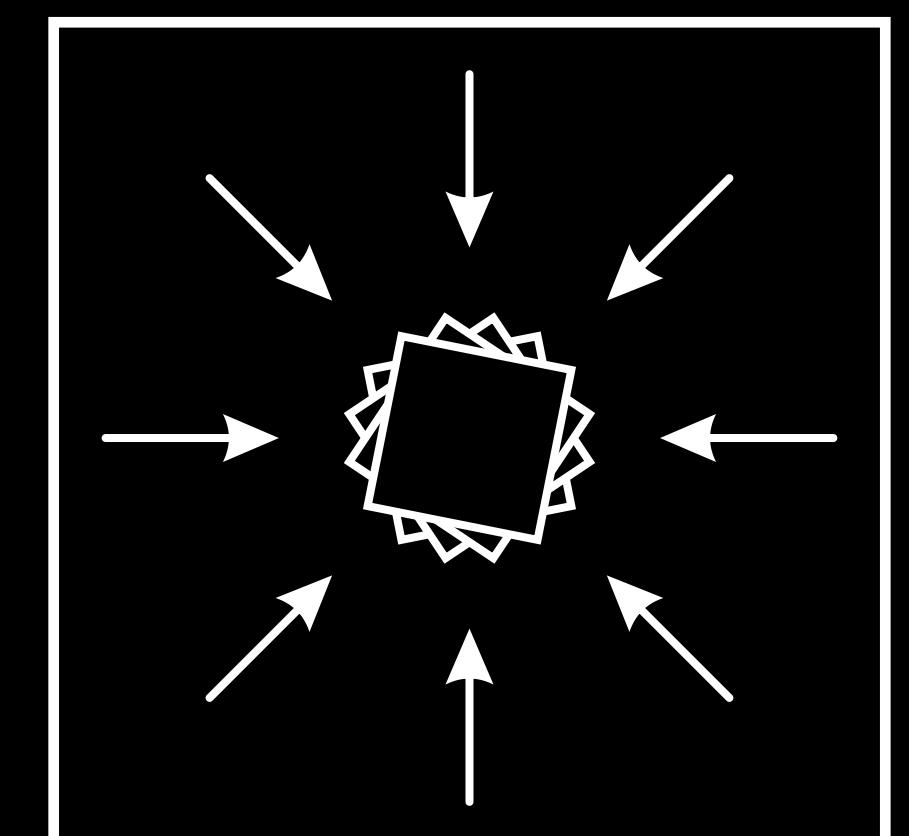
Instantaneous (left) vs. persistent (right) i-buffers. Depending on its desired effects, a tool writes values into an i-buffer to be valid only for the current frame of animation or to persist until a different value overwrites the previous values. While most tools use instantaneous buffer writing, this also requires clearing the i-buffer after each animation step which may be slower for larger i-buffers. Instantaneous tools just exist while an interface is touched, persistent tools need to be created and deleted explicitly.

Example Tool Set

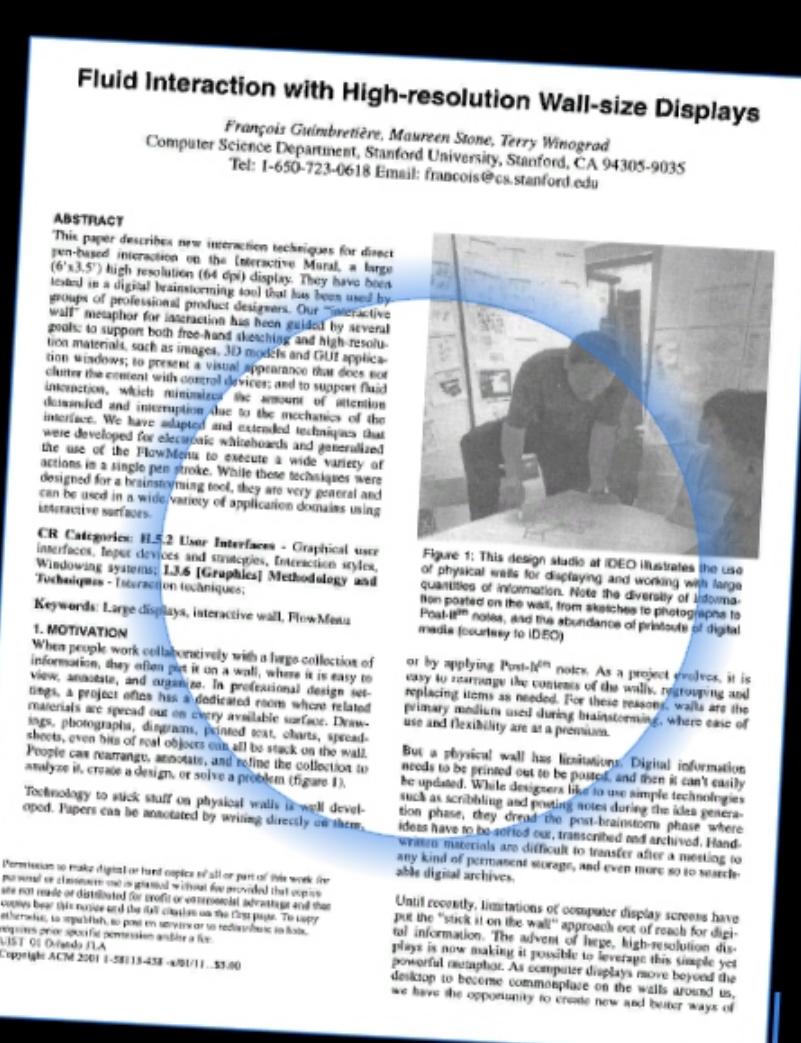
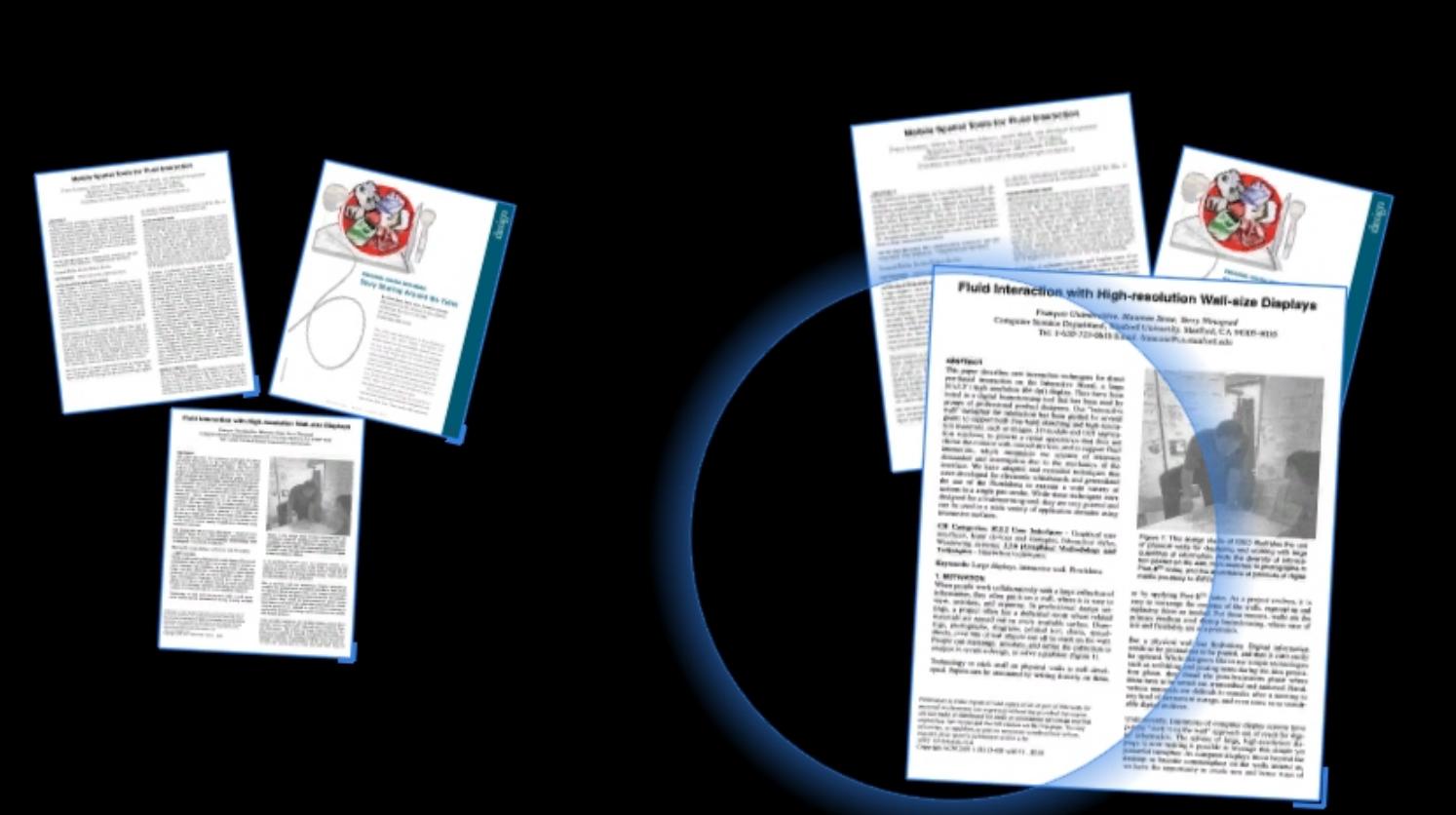
Motion Tool



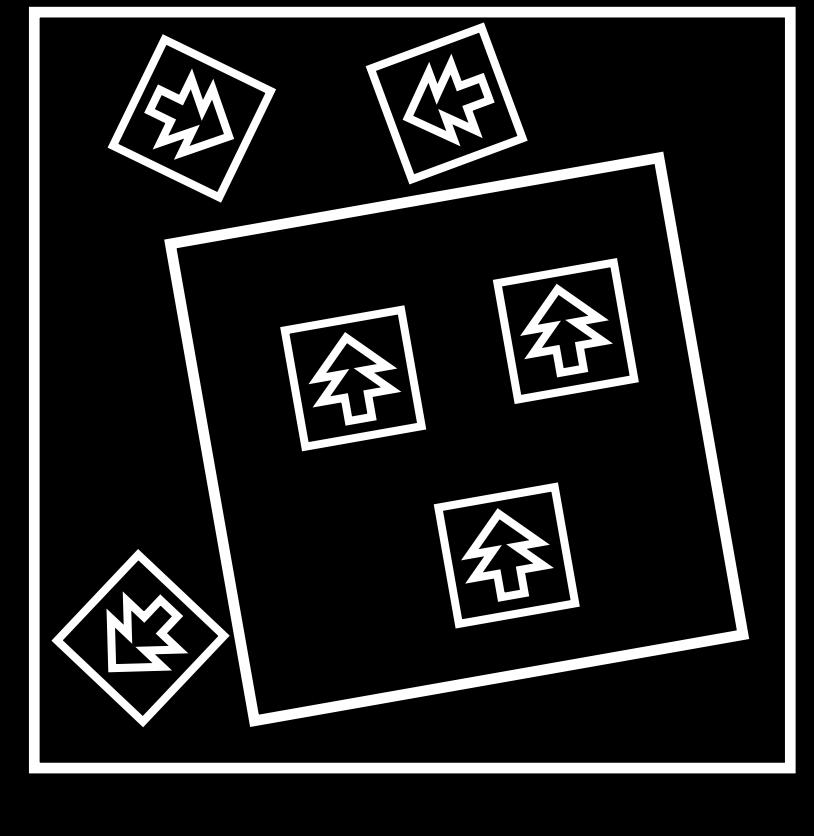
Piling Tool



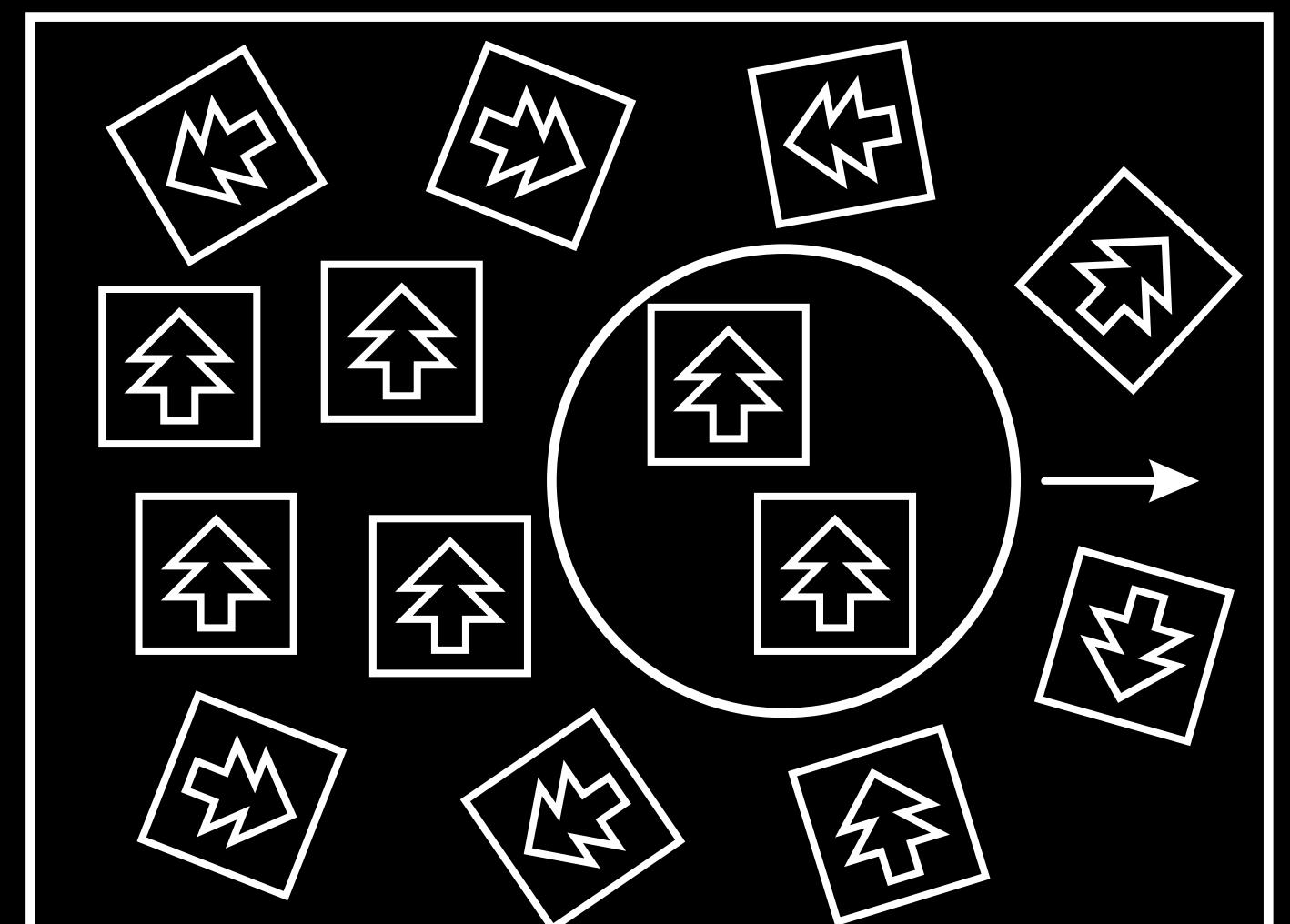
Object Magnification Tool



Alignment Tool



Motion Orientation Tool



Radial Orientation Tool

