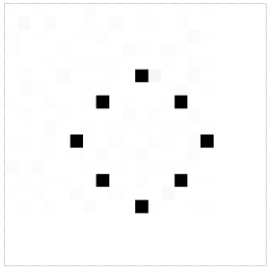
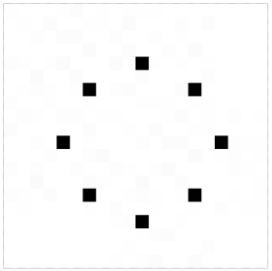
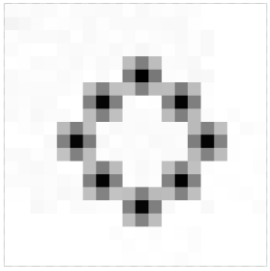
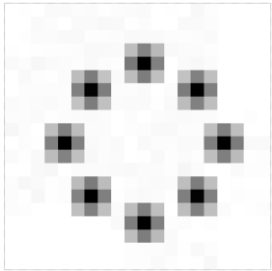
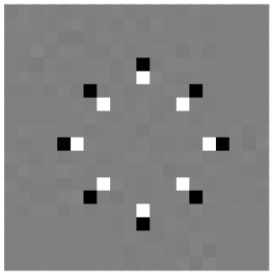
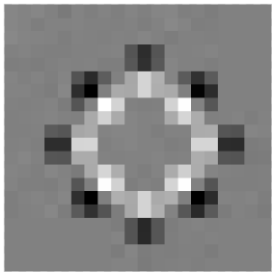
Horn-Schunk Algorithm simple visual results

Below are visual results of using Horn-Schunk algorithm to compute optical flow between two frames containing simple optical motion of black pixels arranged in a circular pattern moving radially outward from frame_1 to frame_2.

1. **Two consecutive frames** *.i.e., I(x,y,t) and I(x,y,t+1)*

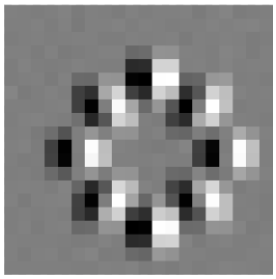
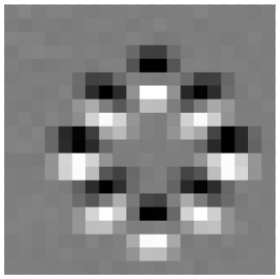
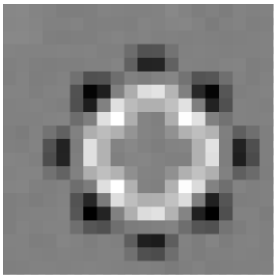
Before preprocessing		After preprocessing	
frame_1	**frame_2**	**frame_1**	**frame_2**
			

note:
In these frames the optical motion is of the blackdots moving radially outward.
Below image are difference (frame_2 - frame_1)

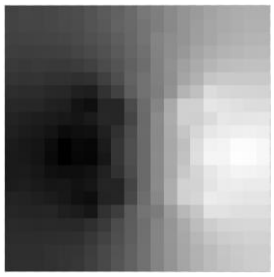
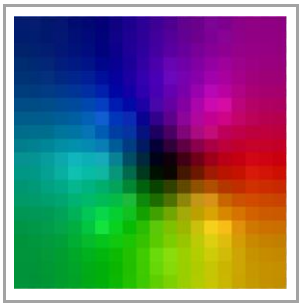
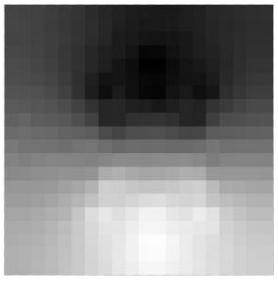
Before preprocessing	After preprocessing
	

2. Computing Optical Flow

- Computing optical flow involves working with Image gradients (I_x, I_y, I_t)

I_x	I_y	I_t
		

- Using **Horn-Schunk** Algorithm, computed flow components **u** and **v** looks like the following

Separate Component form		**Color encoded form**
u		
v		

<u>note:</u>
the color code is computed according to the following scheme