

SIGGRAPH 2008
Supplementary Material

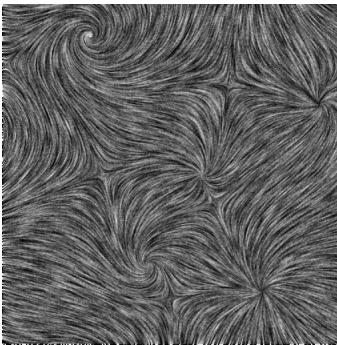
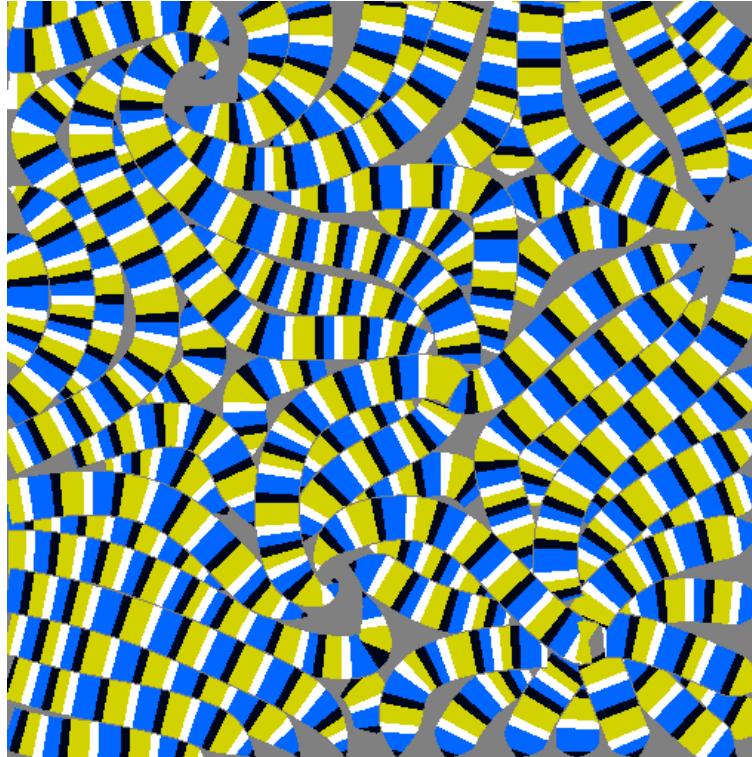
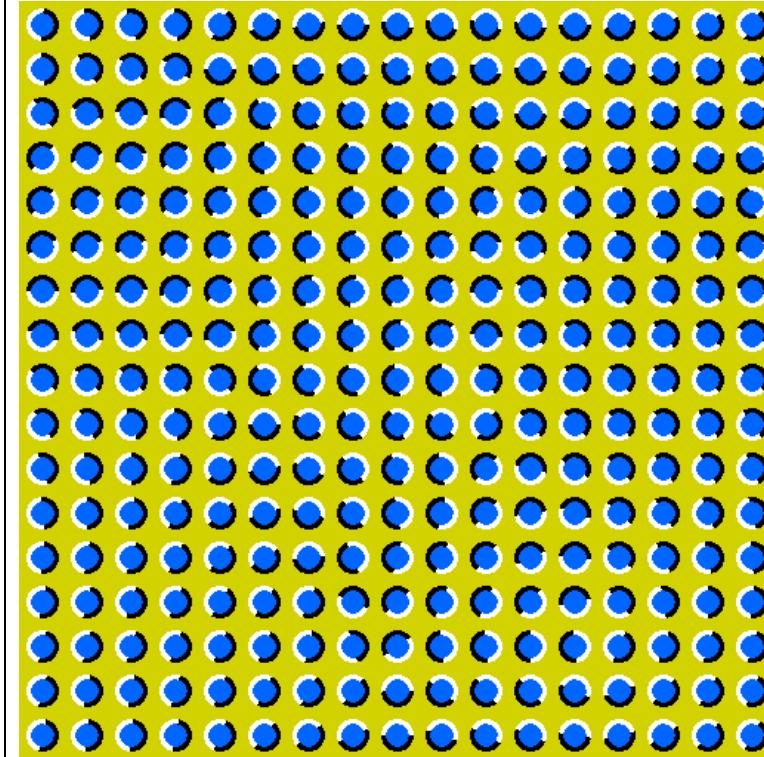
Self-Animating Images: Illusory Motion Using Repeated Asymmetric Patterns

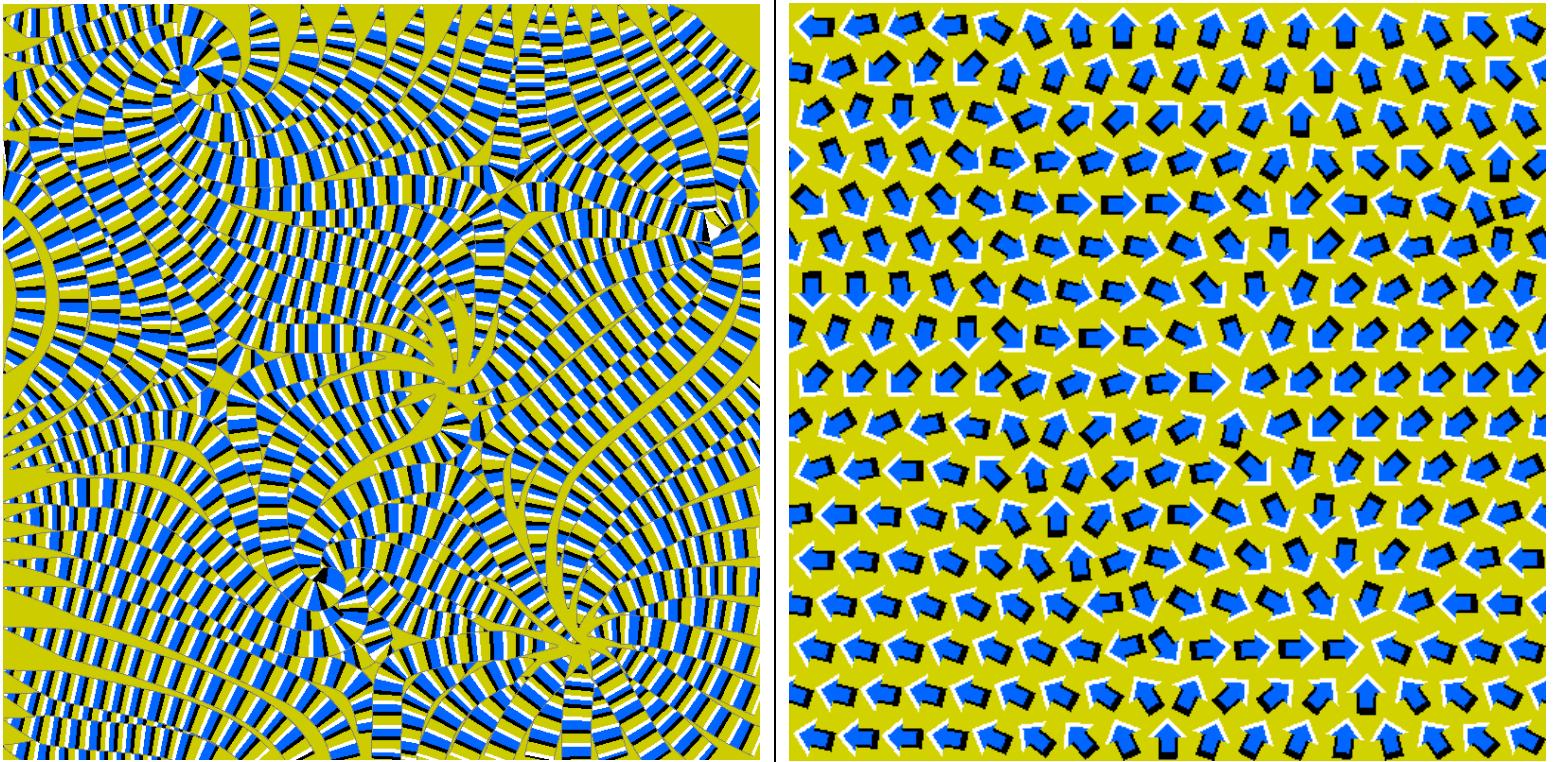
Ming-Te Chi dodowell@cise.ncku.edu.tw	Tong-Yee Lee tonylee@mail.ncku.edu.tw	Yingge Qu ygqu@cse.cuhk.edu.hk	Tien-Tsin Wong ttwong@cse.cuhk.edu.hk
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Project webpage: <http://graphics.csie.ncku.edu.tw/SAI/>

Since the illusory motion effect is scale-dependent, we provide large images in the supplemental material. Please enlarge the PDF file for screen display. The optimal size for display is to span the whole screen with the inspected figure. Glancing around the images, without staring at a fixed position, also helps to perceive the effect. In our experiment, the best viewing distance to screen is roughly the half width of screen.

Streamline-based v.s. Tile-based illusion

		
Vector field (visualization by LIC)	The proposed streamline result (Fig 5 in paper). <i>It can provide more information through the trajectory of streamline.</i>	A simple tile placement result used in Kitaoka's work and [Wei 2006]
Comparison the streamline-based and tile-based placement in the near size RAP. (The similar distance between the edge from black to white)		



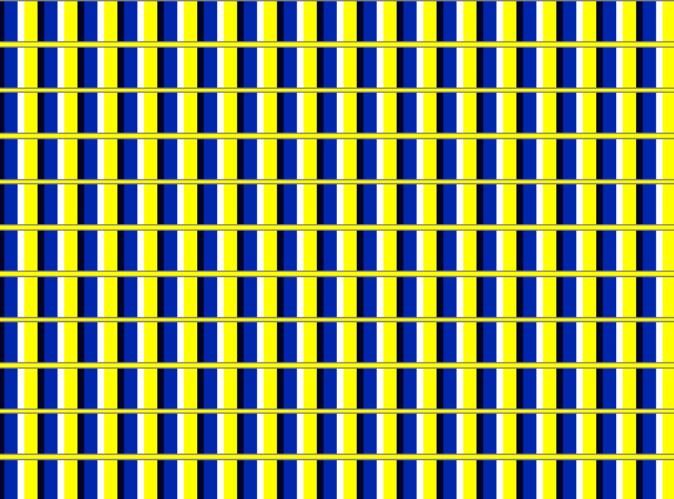
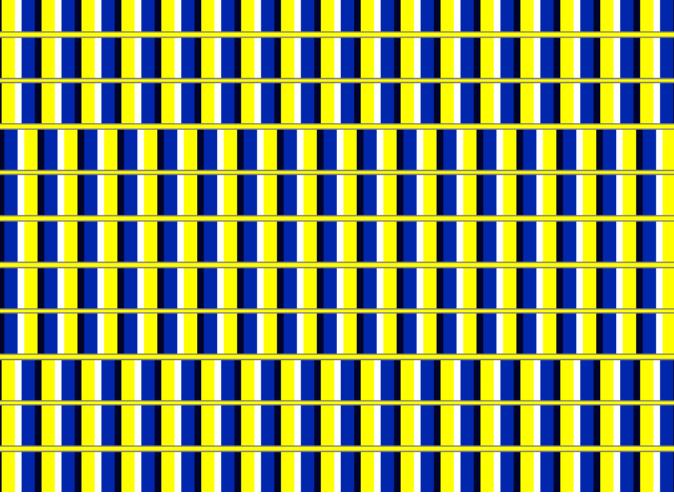
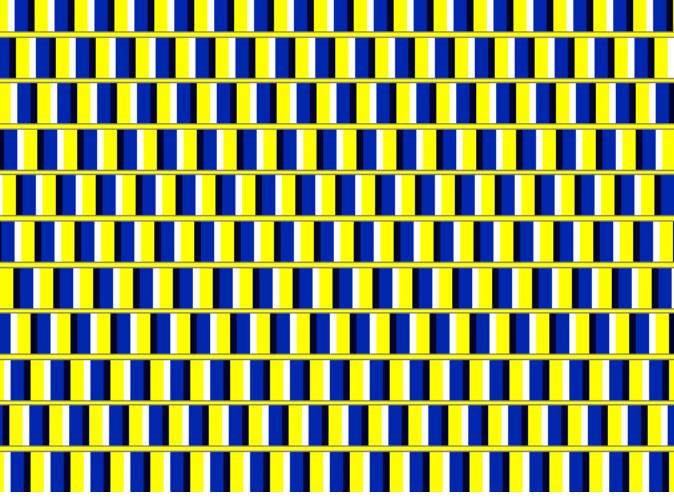
Streamline can provide a more compact placement of RAP and it can strengthen the illusion effect.

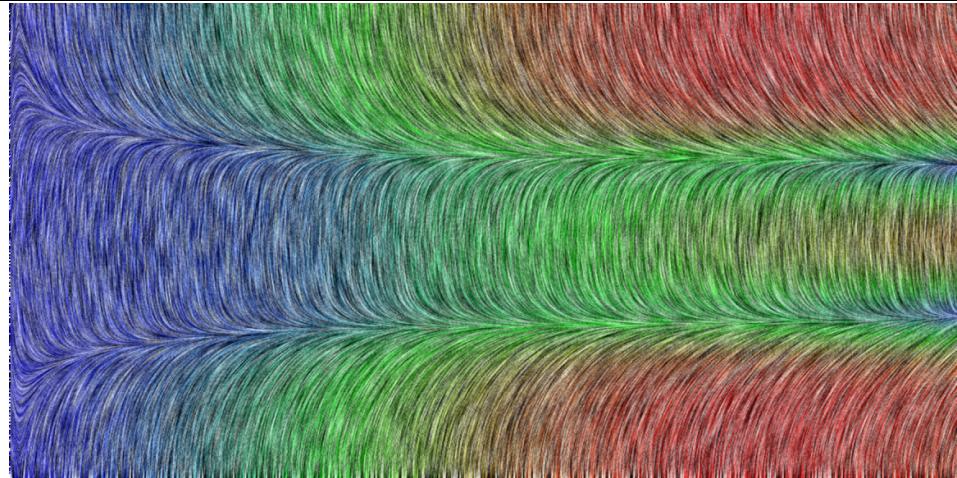
In our paper, we also present an improved Tile-based result in Fig 11 to visualize the vector field. Two improvements include:

1. Use arrow pattern to enhance the motion direction.
2. The consistent distance between neighboring tiles can provide uniform illusory motion effect.

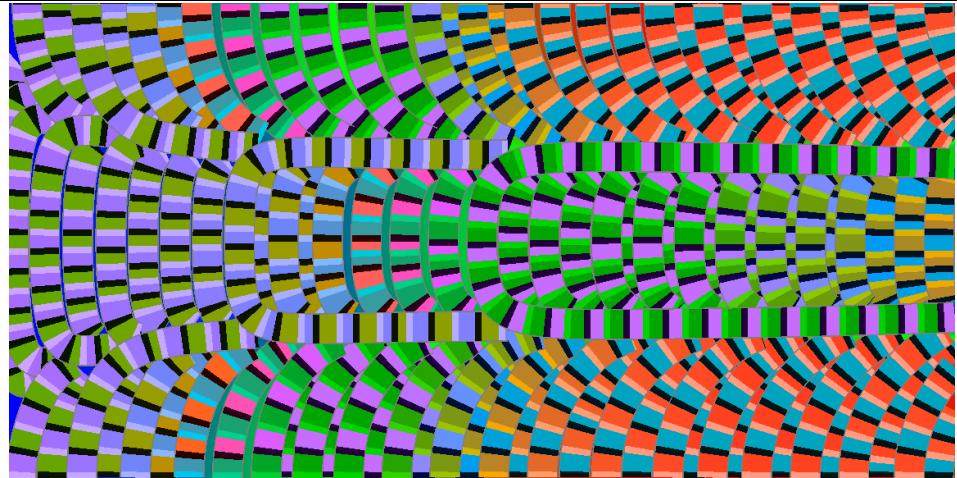
The above result is better than simple tile placement result used in Kitaoka's work and [Wei 2006]

Illusion Motion with/without Our Optimizations

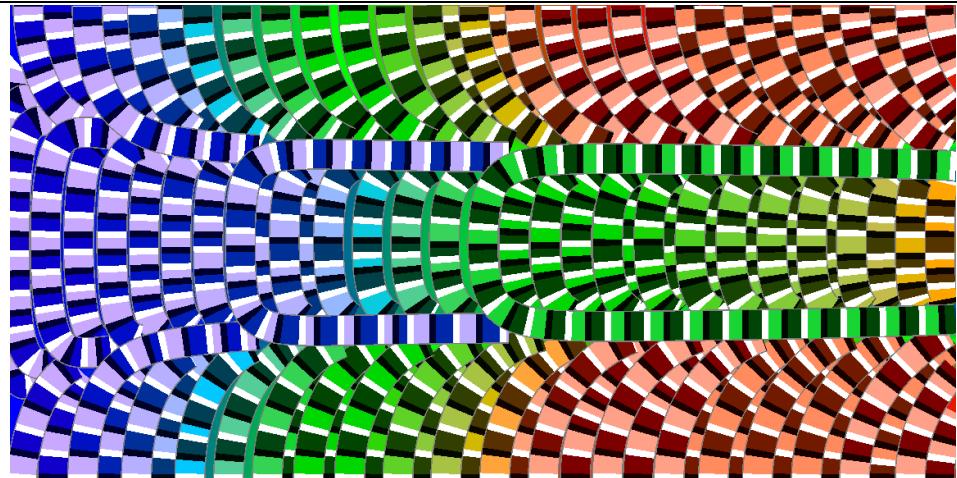
	
A simple RAP placement in a three regions with same direction.	Use fragment offset optimization with same direction.
	
Use opposite direction optimization.	Use opposite direction and fragment offset optimization.
Comparison study: the strength of illusion motion with/without the proposed optimization method.	



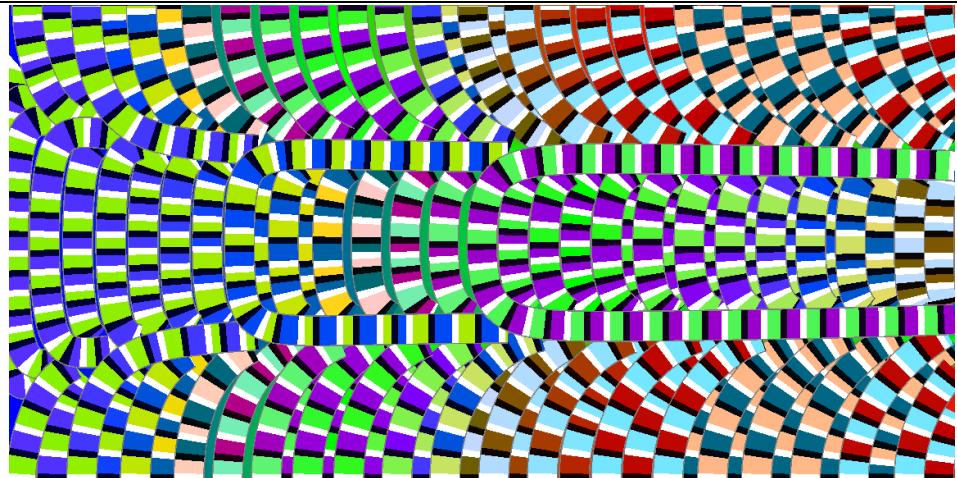
(a) LIC vector field visualization.



(b) Mistake in lightness order leads to weak or no motion.

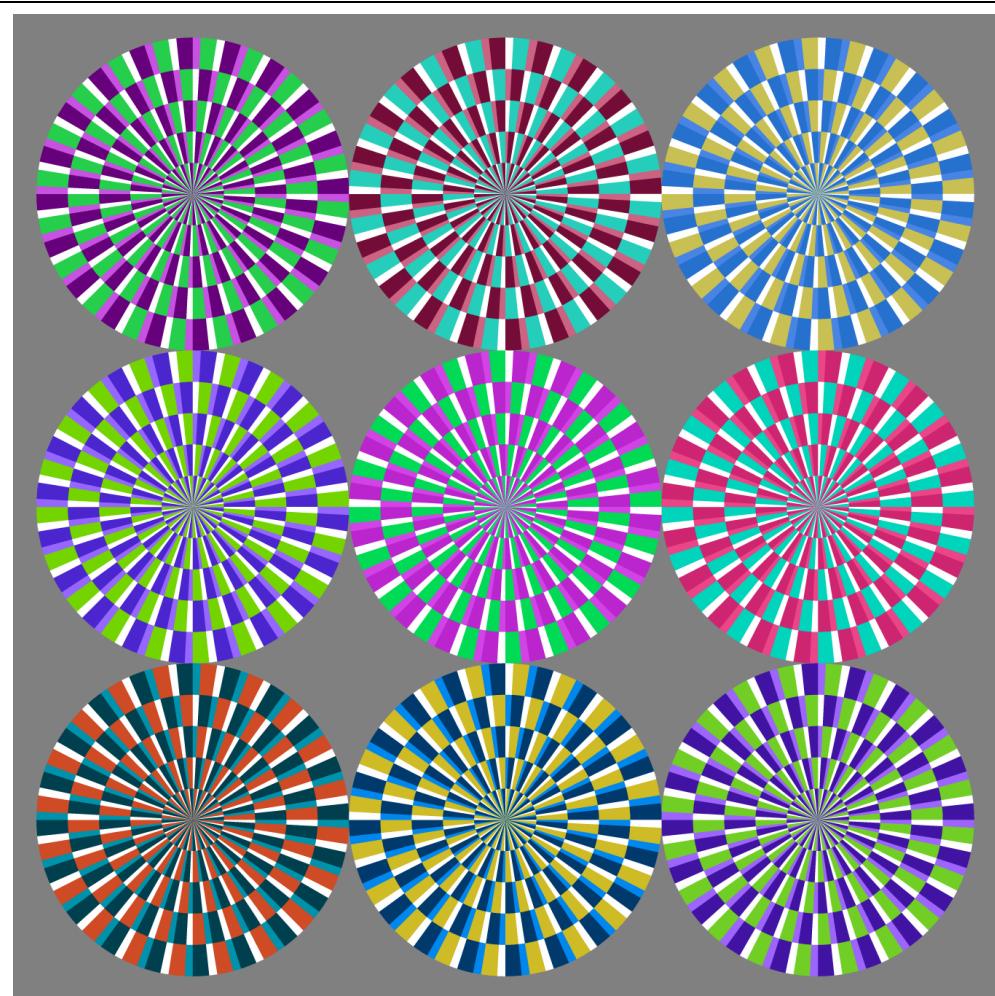


(c) Small hue difference leads to weak motion.

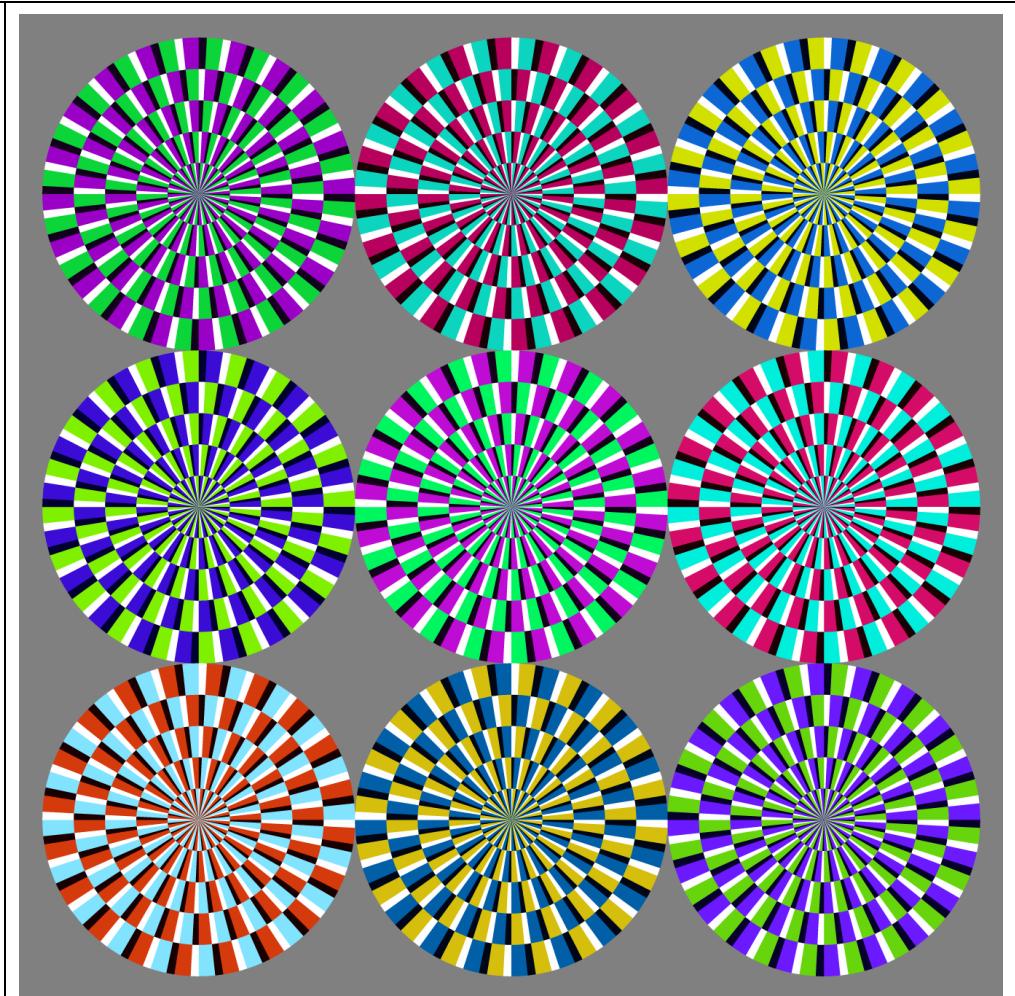


(d) Our color and optimization lead to strong motion.

The proposed “FOUR COLOR RAP FINDING” provides a useful tool. Manually selecting proper color combination for strong illusion effect is a difficult and tedious work. Mistakes in the lightness order or the hue difference will easily happen and will reduce the illusion effect as shown in the left-side images. The proposed method provides an automatic selection, and generates strong illusion effect.

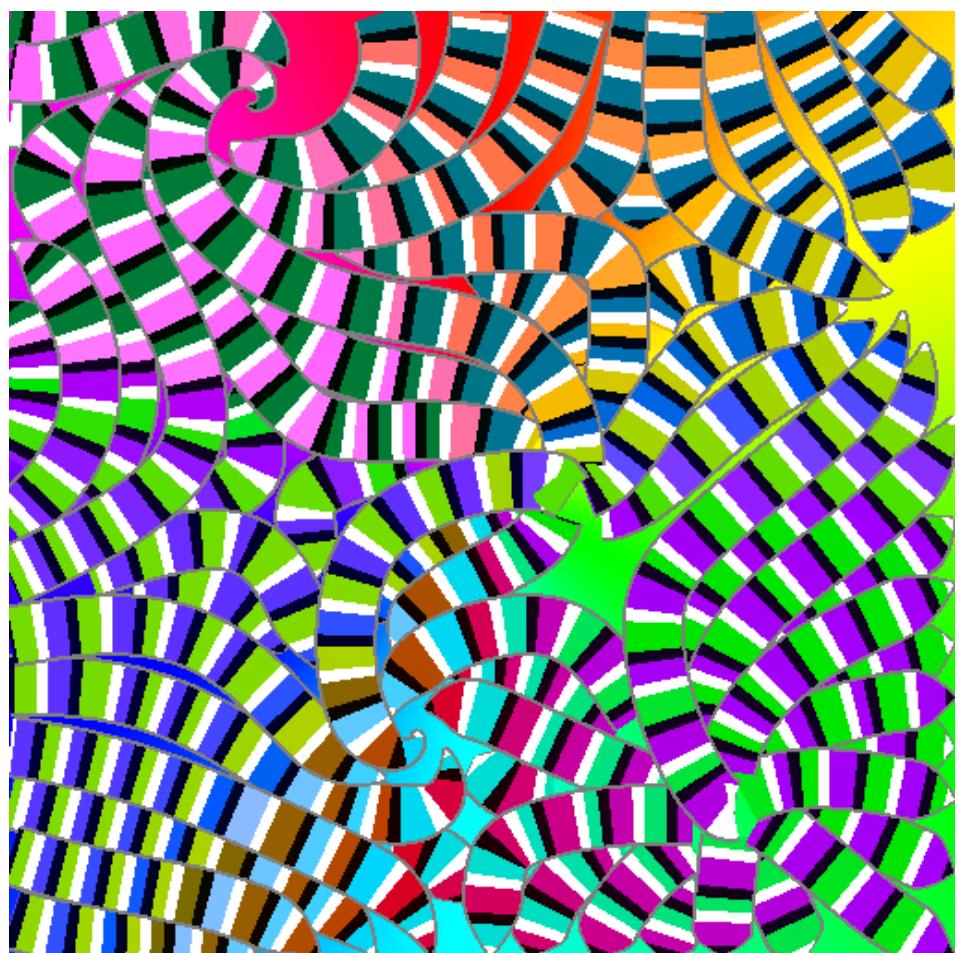
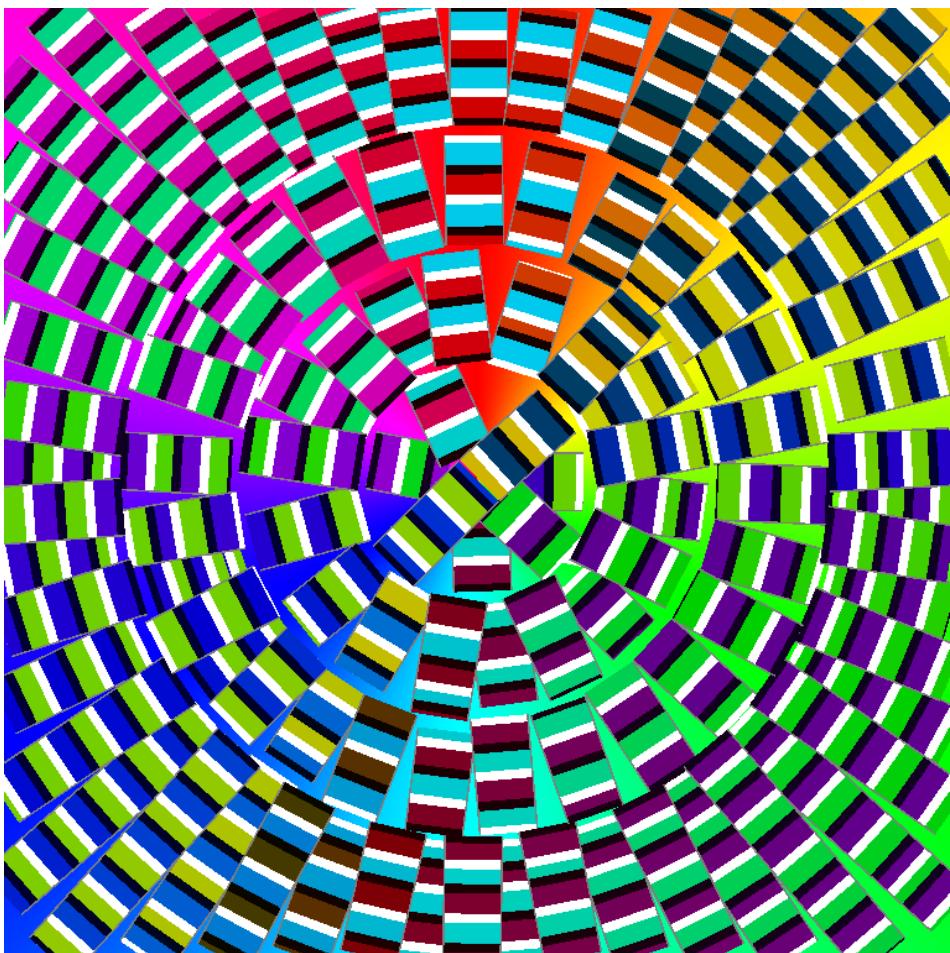


The well-known “Rotating Snakes” in Kitaoka’s work m generate weak illusion if the color is arbitrarily chosen.



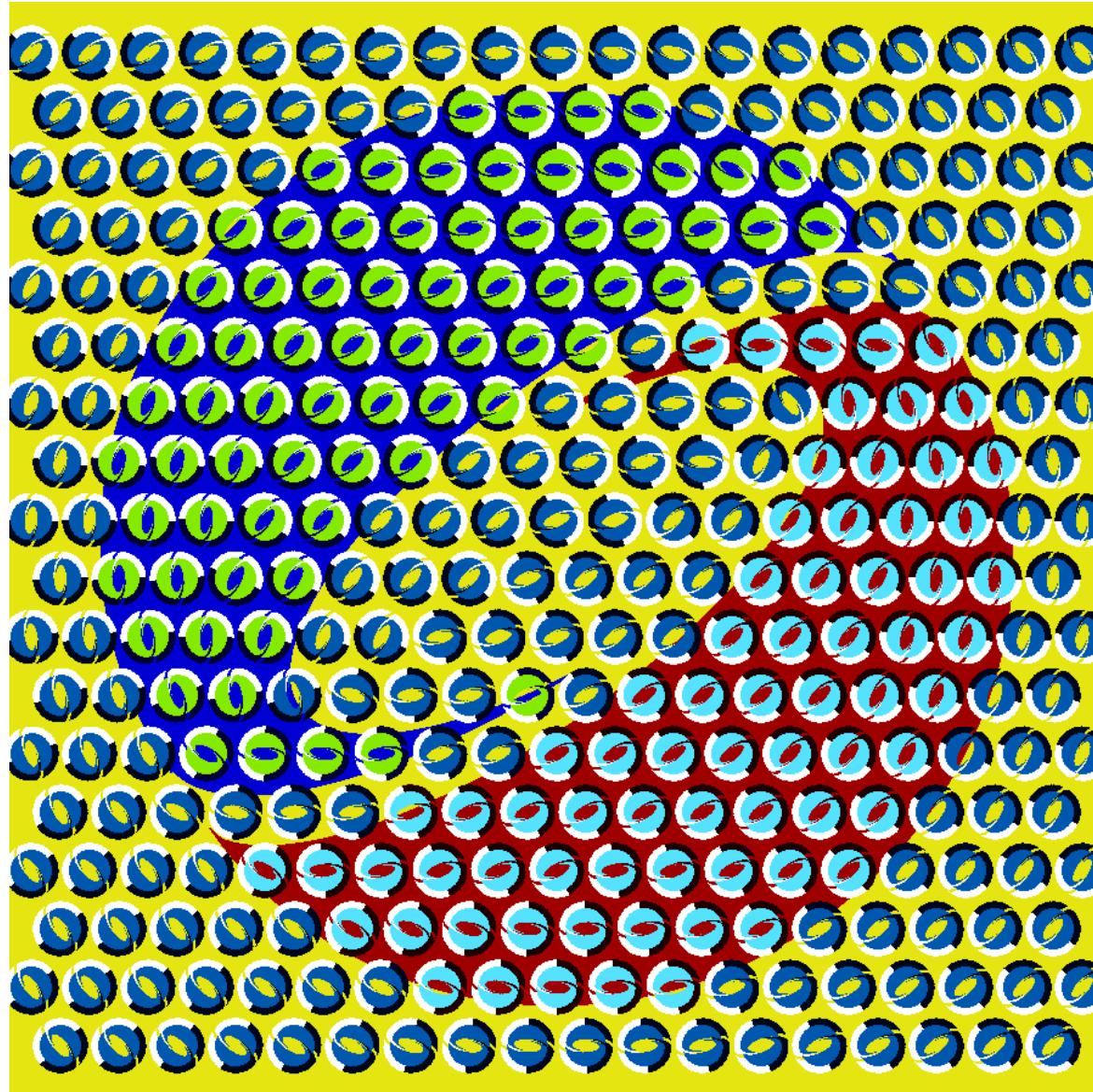
Our method could select better color combination.

Our method can automatically convert the left-side images to the right-side images and yields stronger illusion.

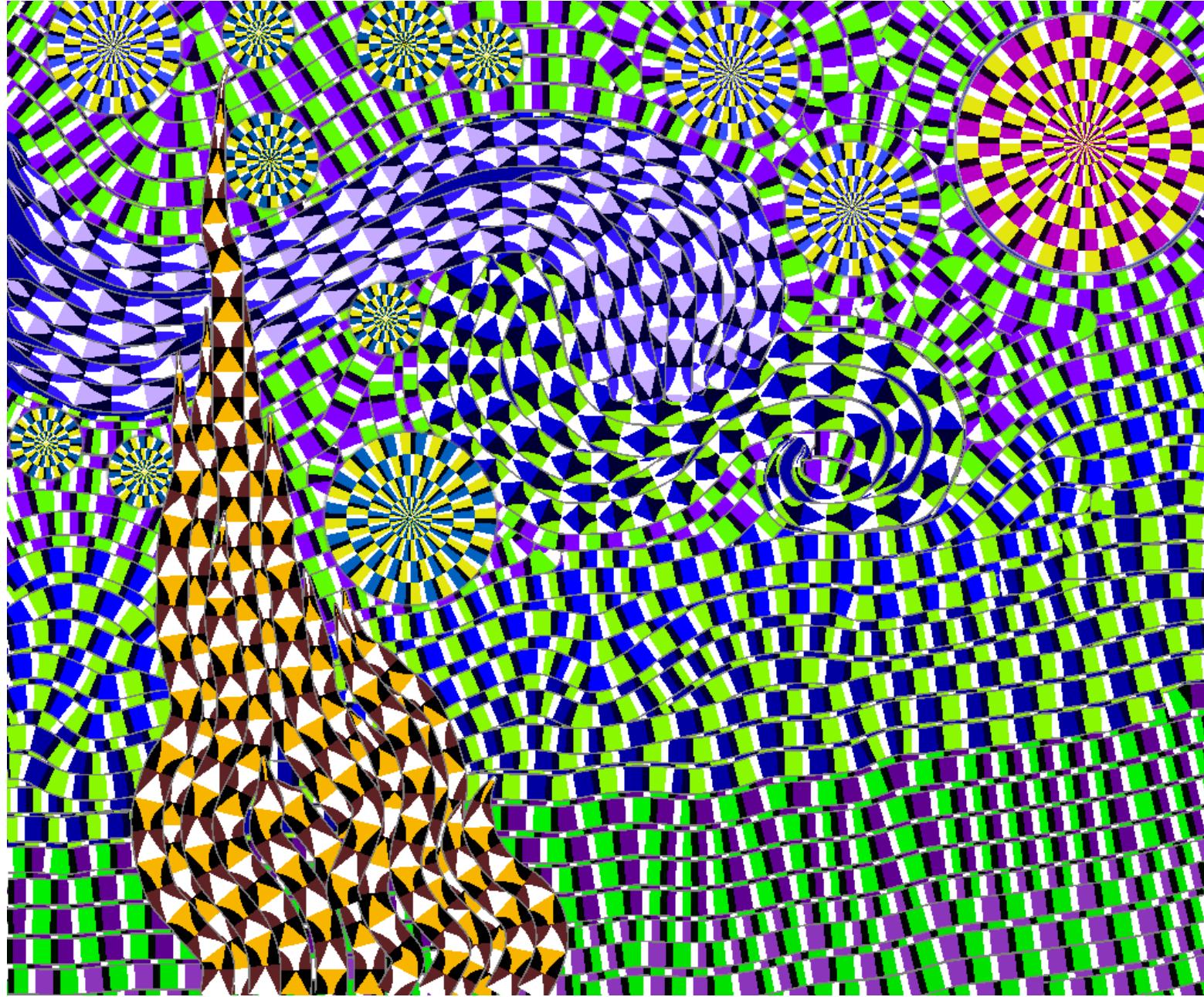


The color selection method also helps in generating colorful results with strong illusion.

Self-animating images



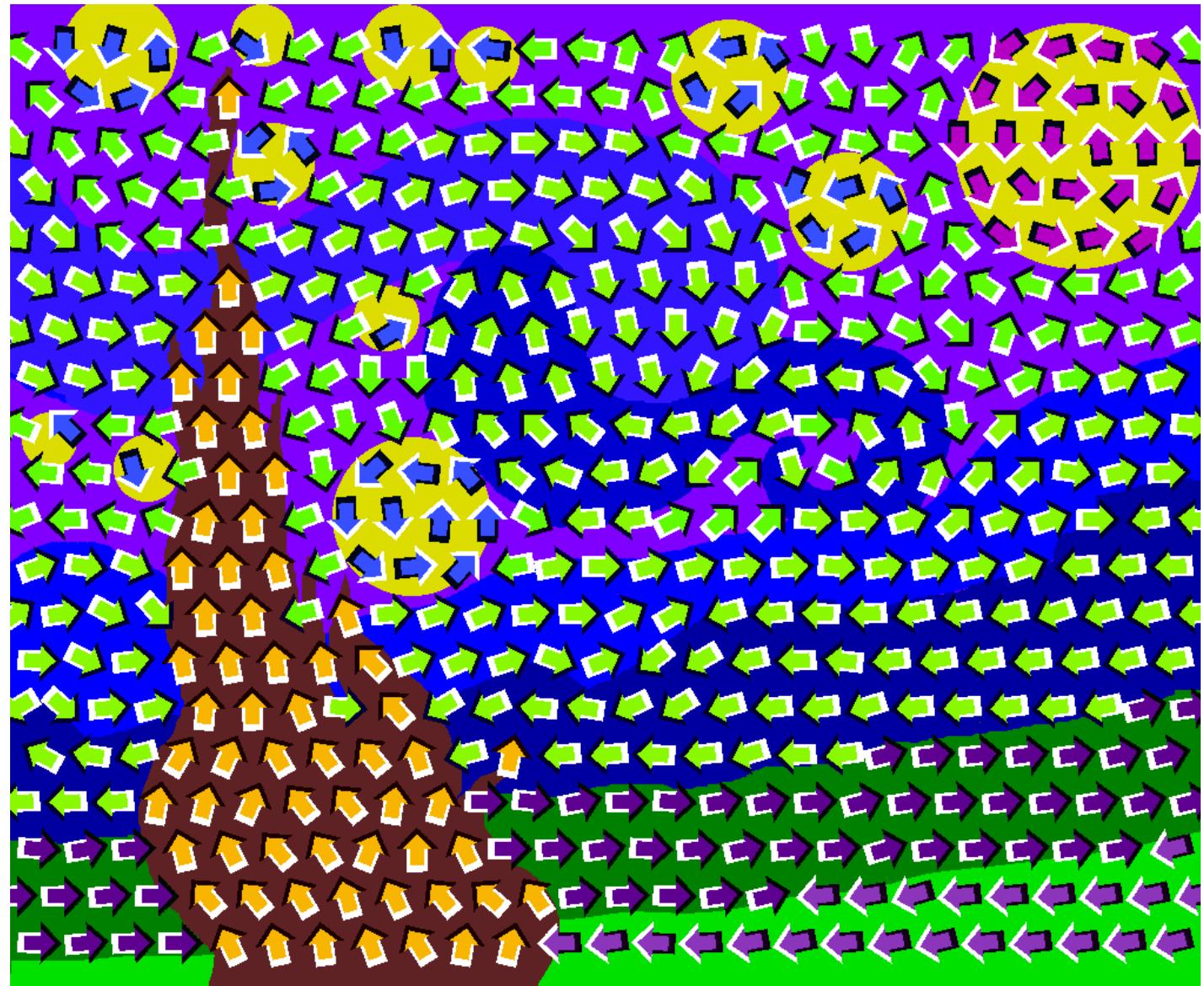
Advertising design using the SIGGRAPH logo.



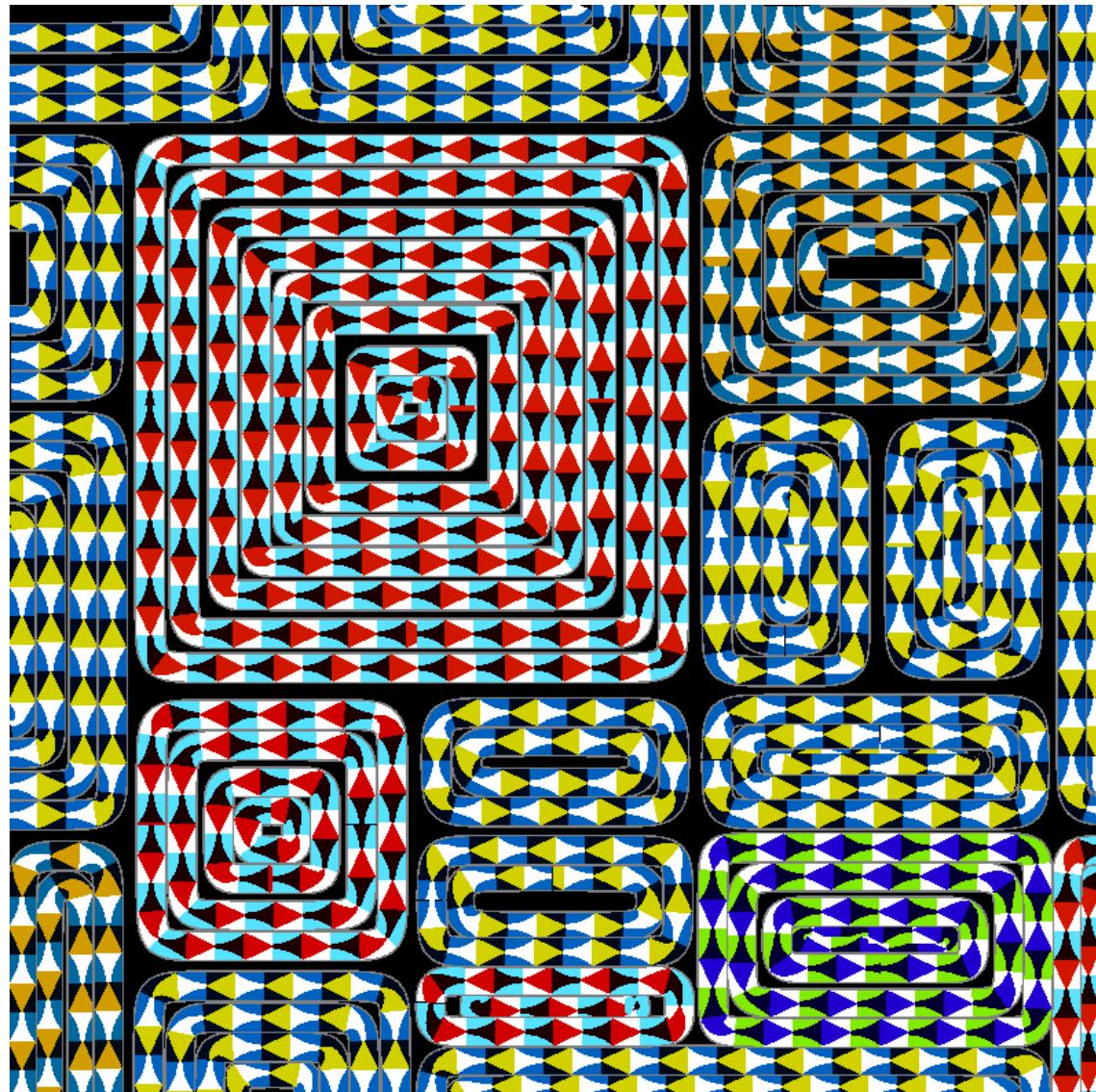
Hybrid result contains the TYPE II, TYPE III streamlines, and the “Rotating Snake”.



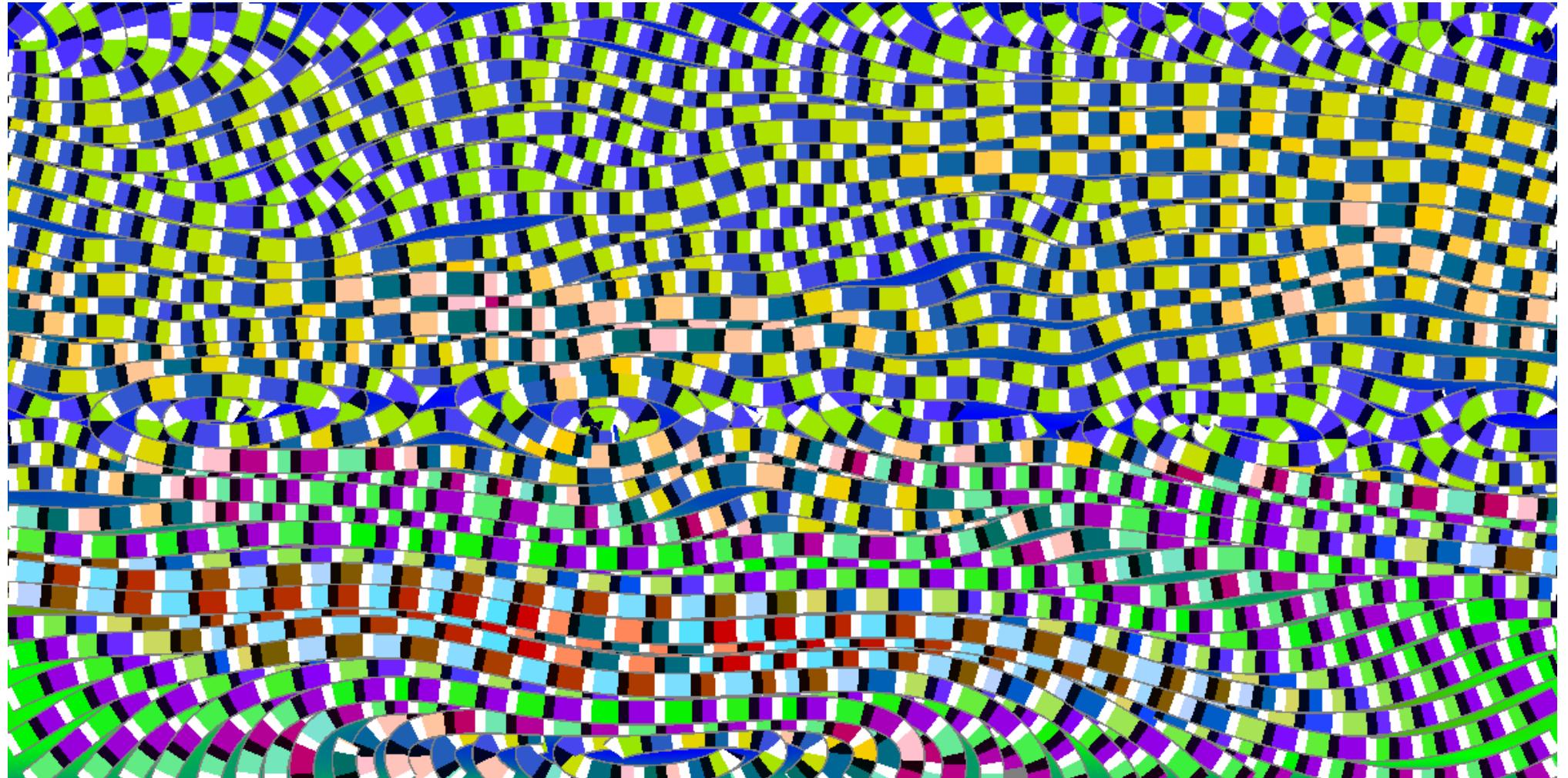
Region map.



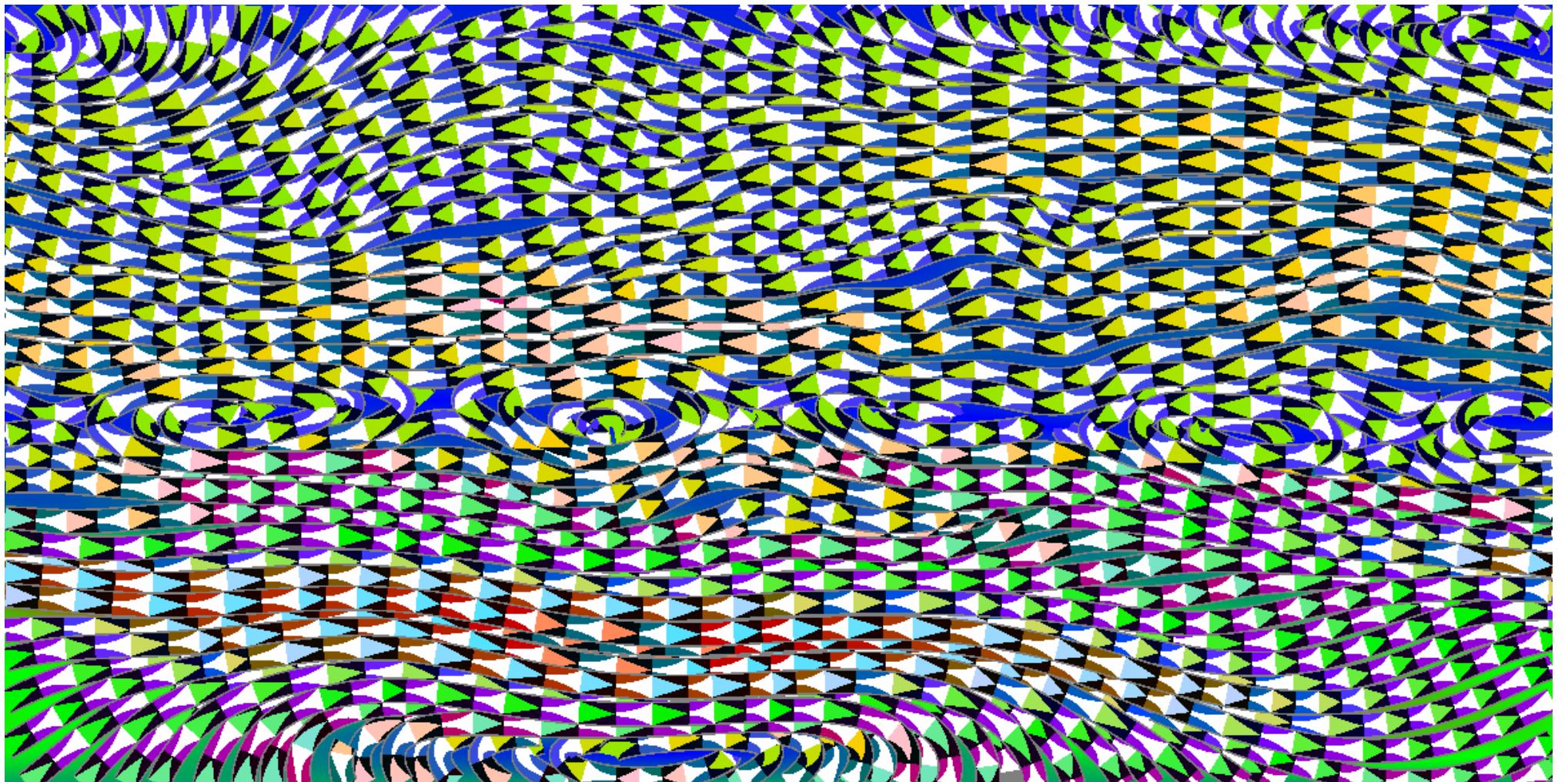
Vector field.



A TYPE III streamline-based result, this image inspired by
Piet Mondrian's artwork: "Composition with red, yellow blue and black."



An example of TYPE II streamlines on showing an ocean flow.



An example of TYPE III streamlines on showing an ocean flow.



Visual effect by illusion motion

Foreground image is provided by Allen Lee (<http://tw.myblog.yahoo.com/jw!g8w7na.THBqP4LgdSatUu4.tEYWDfw--/>).



Visual effect by illusion motion

Foreground image is provided by Allen Lee (<http://tw.myblog.yahoo.com/jw!g8w7na.THBqP4LgdSatUu4.tEYWDfw--/>).

Acknowledgments

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