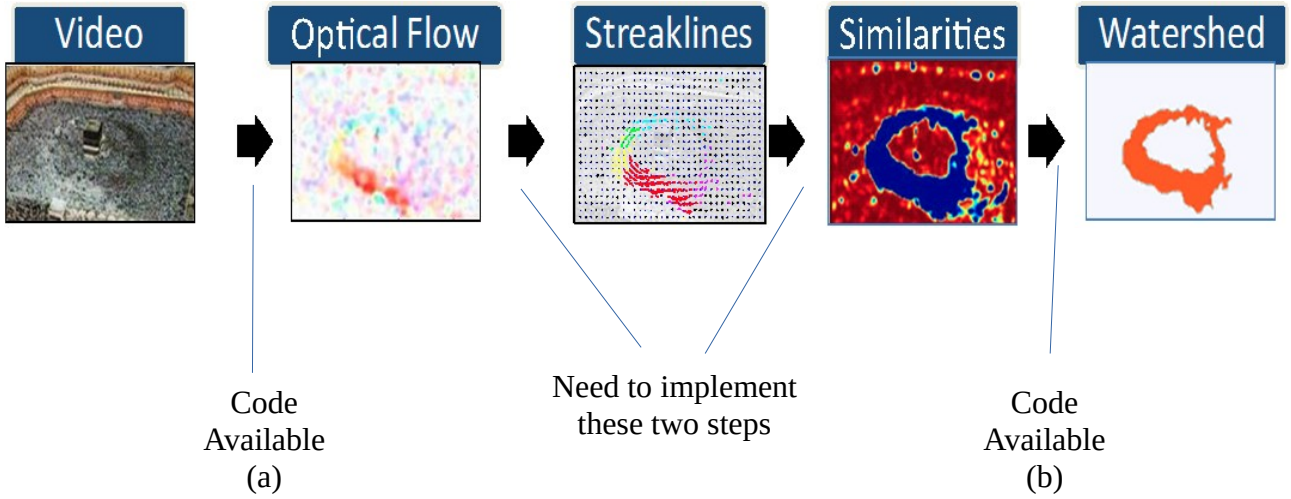
Assignment

Streakflow for crowd Segmentation

Dominant crowd flow segmentation is the first step towards building an automated monitoring system for high density crowd scenes. In computer vision, optical flow is widely used to compute pixel wise instantaneous motion between consecutive frames, and numerous methods are reported to efficiently compute accurate optical flow. However, optical flow does not capture long-range temporal dependencies, since it is based on just two frames. In order to achieve an accurate representation of flow from crowd motion, we use the streaklines to compute a new motion field which we refer to as streak flow. To compute streak flow, streaklines are computed by temporally integrating optical flow.



(a) Dense Optical Flow in OpenCV
https://docs.opencv.org/3.4/d4/dee/tutorial_optical_flow.html

(b) Watershed Segmentation
https://docs.opencv.org/4.x/d3/db4/tutorial_py_watershed.html

Dataset

Complete datset is available in downloads section of this link
http://www.cs.ucf.edu/~sali/Projects/CrowdSegmentation/index.html

Reference

R. Mehran, B. E. Moore, and M. Shah, “A streakline representation of flow in crowded scenes,” in *Computer Vision—ECCV 2010: 11th European Conference on Computer Vision, Heraklion, Crete, Greece, September 5–11, 2010, Proceedings, Part III*, vol. 6313 of *Lecture Notes in Computer Science*, pp. 439–452, Springer, Berlin, Germany, 2010.

https://www.crcv.ucf.edu/projects/streakline_eccv/