Methods of Image Analysis

by Igor Polkovnikov, 2017-01-30

1. "Interaction" of objects in the image by tracking how minimal changes on one object affect other objects.

How it works. For example, we have a letter A, and extract a dale [see my previous articles] opened down. Then dilate it left. Subtract from the original O. Investigate, how O is affected. Similarly, the O can be eroded starting from the dale.

Another example, in addition to above, the left dale is found, or many other dales. Expanding the dale gradually, step by step, reveals what other objects it is connected to and how.

Instead of dilating, eroding, expanding, it can be any other operation allowing incremental changes in any way.

This is the method of building "system structure" of the image. There could be many such system structures.

OCT 19 2016 подвергаем воздействию. method.

что изменилось?


это "part." не знаем, зависим от SP.

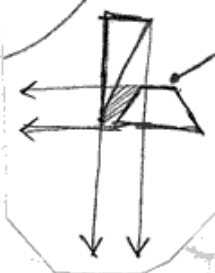

- other parts.


reconstructed part which give birth to the dale-part

reconstructed part of the left area.

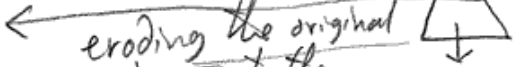
I can find if they intersect.

or smooth grey- it is possible, but not on BWs.


their intersection is "a leg".


How?

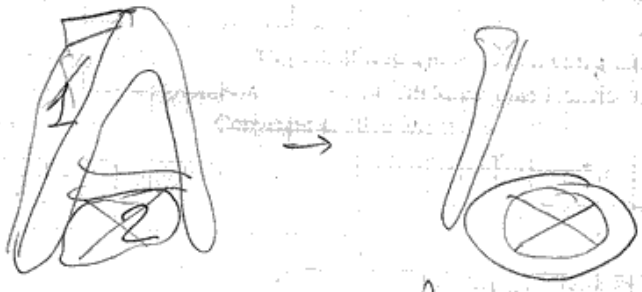
or


eroding the original image to the left of the dale. and then see, what happens to other. objects

thus establishing an "interconnection matrix".

make it !!

an article.



eroding the original image "from the dale" — implement this function!

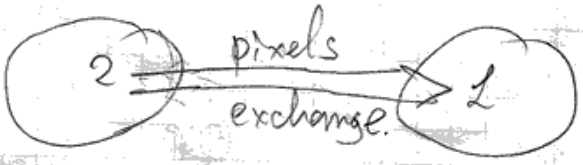
method of small changes to find subsystems which interact, are interdependent

systematic approach!

and see if other parameters of original image are changed

other operations are possible.

those which change – interact.

2 → 1. ⇔ 

through 1-pixel dilation.

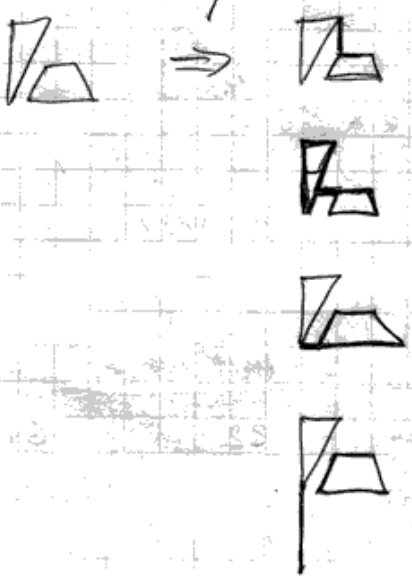
- Repeat several times.
- ~~is~~ Changed or disappear?
- ⇒ a matrix of subsystem interactions is devised.

2. Meth of image superposition to generate dales over images without dales.

One images or small image elements may be overimposed (added, in a simple case) over an original O.

In particularly, this method can be used to find spatial frequencies which are periodical or aperiodical on images which does not contain enough features. For example, if round objects are present, and some of them are close, superposition of images with lines may produce dales which are absent in the previous image. Where dales - the close objects are present. Dales are very robust to all sorts of distortions, that is why this method may be very powerful.

добавить палочки: и посмотреть на владимиры.

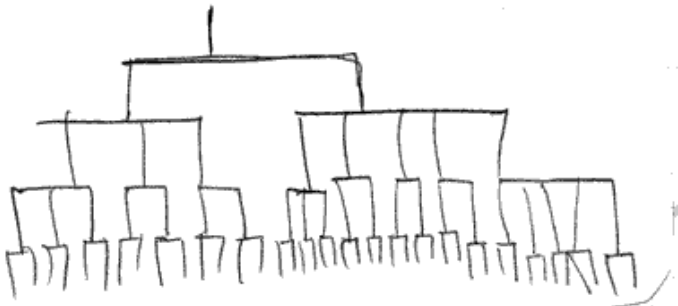


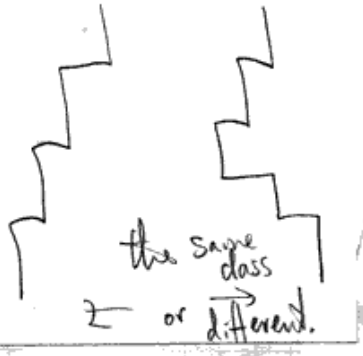
method.

- submethod of small changes.

establishing a "bounding rectangle."

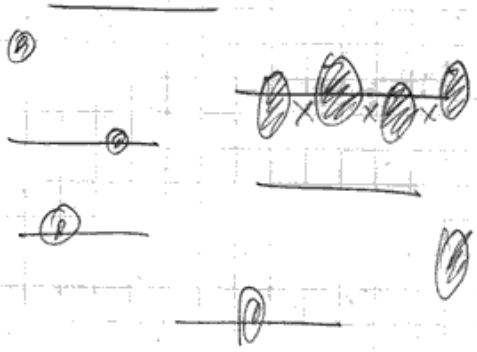
class tree





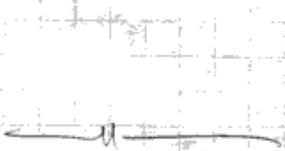
2016-Nov-02.

1)



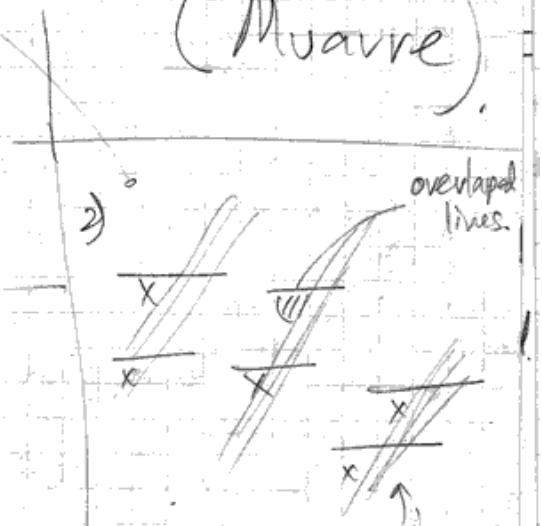
!!!

How to find periodic patterns with method of superposition (Muavre).



Boris: OpenCV + Image Warp.

2)



3) the same method can be applied to ~~find~~ analyse more complex slopes: