15/08/18

Noy Shulman

Noyshu@gmail.com

https://github.com/noyshu/LT_HW_NoyShulman

Light tricks interview exercise:

To run the program, clone or download the repository from the git link or extract it from the zip.

Then use “make” to compile and “java Main” to run. (yea, I know you know but just in case).

Original image:

Black and white image:

A square hole in KD’s armpit:

*** I used a square hole as an example but my solution will fill holes of most shapes.

The hole filled using the provided weight function: ‘

The parameters used were: epsilon = 0.1, z = 3.

If there are n pixels in the hole the then border is about PI*sqrt(n) at the best case or 2*n at worst case. Every hole pixel uses all the border pixels in the calculation so the complexity of the exact solution the way I implemented it is O(n^2).

The approximate solution:

The parameters used were: epsilon = 0.1, z = 3.

In this solution instead of using O(n) border pixels I used an arbitrary fixed number (7) of border pixels evenly distributed around the hole. for each one of these pixels I calculated the mean of the border pixels close to them so that every border pixel is taken into consideration. Since now we get a fixed number of calculations for every hole pixel then the complexity is O(n).