1. Laplacian of gaussian

- Purpose of the code

"LoG-skeleton.cpp" and "LoG_RGB.cpp" codes are implementing edge detection using Laplacian of gaussian. First to remove the noise do gaussian filtering. And then do Laplacian filtering with the output of gaussian filtering to detect edge.

"LoG-skeleton.cpp" is for grayscale input image and "LoG_RGB.cpp" is for RGB input image.

In this code the boundary processing method is mirroring.

- Environment

    visual studio 2019 with opencv 2.4.13.6

- How to run this code

    cl LoG-skeleton.cpp

    cl LoG_RGB.cpp

- How to adjust parameters

    to change input image: edit "input.jpg"

    Mat input = imread("input.jpg", CV_LOAD_IMAGE_COLOR);

    to change the size of window and value of sigma: edit "window_radius", "sigma_t", and "sigma_s"

    int window_radius = 2;

    double sigma_t = 2.0;

    double sigma_s = 2.0;

2. Canny edge detector

- Purpose of the code

"Canny-skeleton.cpp" implements the canny edge detector using the function provided by OpenCV. Canny edge detection is the most popular way for edge detection. First do gaussian filtering and soble filtering. This is what Canny() function actually do.

- Environment

    visual studio 2019 with opencv 2.4.13.6

- How to run this code

    cl Canny-skeleton.cpp

- How to adjust parameters
  to change input image: edit "input.jpg"
  Mat input = imread("input.jpg", CV_LOAD_IMAGE_COLOR);

  to change the parameter value: edit the parameter in Canny function
  Canny(input_gray, output, 30, 125, 3, false);

3. Harris Corner Detector

- Purpose of the code

This code is for harris corner detection using the function provided by OpenCV. I added the non-maximum suppression to remove overlapped counting corners. And I used the cornerSubPix() function for achieving a subpixel accuracy in the corner detection.

- The environment
  visual studio 2019 with opencv 2.4.13.6

- How to run this code
  cl Harris_corner-skeleton.cpp

- How to adjust parameters
  to change input image: edit "input.jpg"
  Mat input = imread("input.jpg", CV_LOAD_IMAGE_COLOR);

  to change the option for the non-maximum suppression: edit Boolean value true to false
  bool NonMaxSupp = true;

  to change the option for subpixel refinement: edit Boolean value true to false
  bool Subpixel = true;