Implement Gaussian Smoothing filter

201533653 양유성

Avg. Filter

Avg. Filter (main code)

```
int getAverage(Mat img_origin, int x, int y, int size) {
    int sum = 0;
    int avg = 0;
    int max, min;

    max = size/2;
    min = -(size/2);

    for (int i = min; i <= max; i++) {
        for (int j = min; j <= max; j++) {
            sum += img_origin.at<uchar>(x+i, y+j);
        }
    }
    avg = sum/(size*size);

    return avg;
}
```

Gaussian Filter

Gaussian Filter

```
int getGaussian(Mat img_origin, int x, int y, int size, float sigma) {
    int sum = 0;
    int avg = 0;
    int max, min;
    float coef;
    float coefSum = 0;
    int xMulti=0, yMulti=0;

    max = size/2;
    min = -(size/2);

    for (int i = min; i <= max; i++) {
        yMulti = ABS(i);
        for (int j = min; j <= max; j++) {
            xMulti = ABS(j);
            coef = 1.0/(3.14*2*pow(sigma, 2)) * (pow(2.71, (-((pow(xMulti, 2) + pow(yMulti, 2))))/(2*pow(sigma, 2))));
            coefSum += coef;

            sum += img_origin.at<uchar>(x+i, y+j) * coef;
        }
    }

    avg = sum/coefSum;

    return avg;
}
```