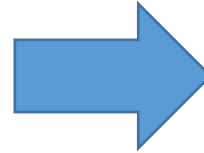
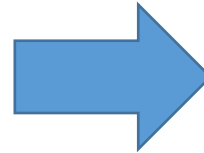


HW1 : Low-level Feature Extraction

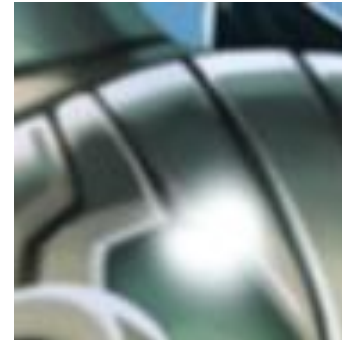
Part 1 – Gaussian smooth



Gaussian



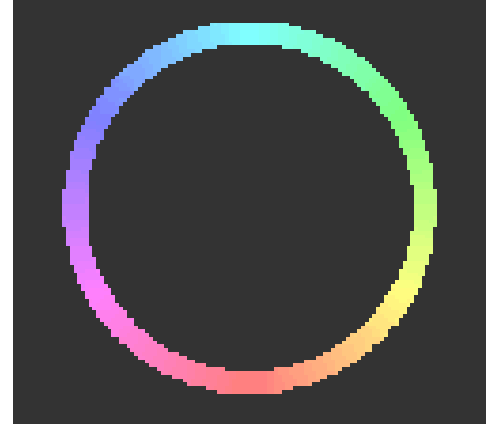
Gaussian



Part 1 – Gradient



rgb2gray



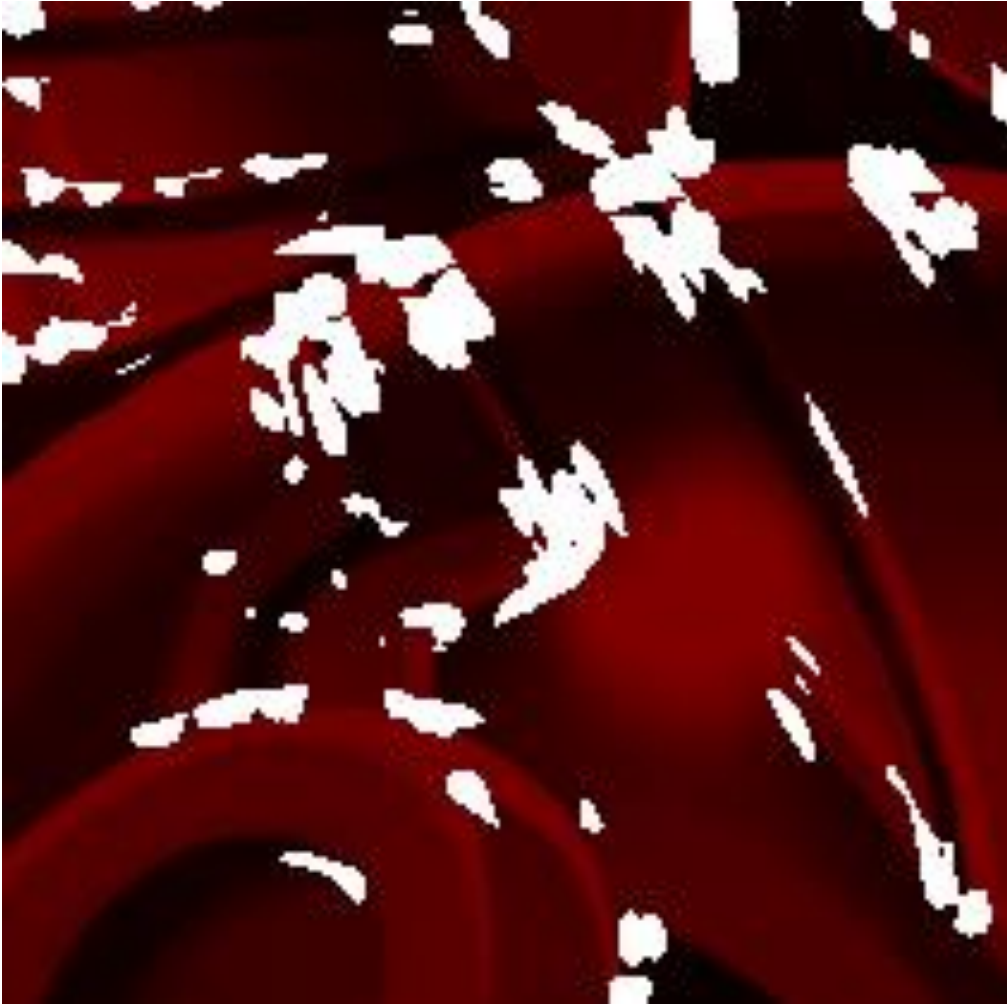
Direction



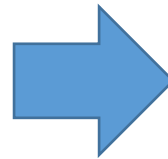
Magnitude



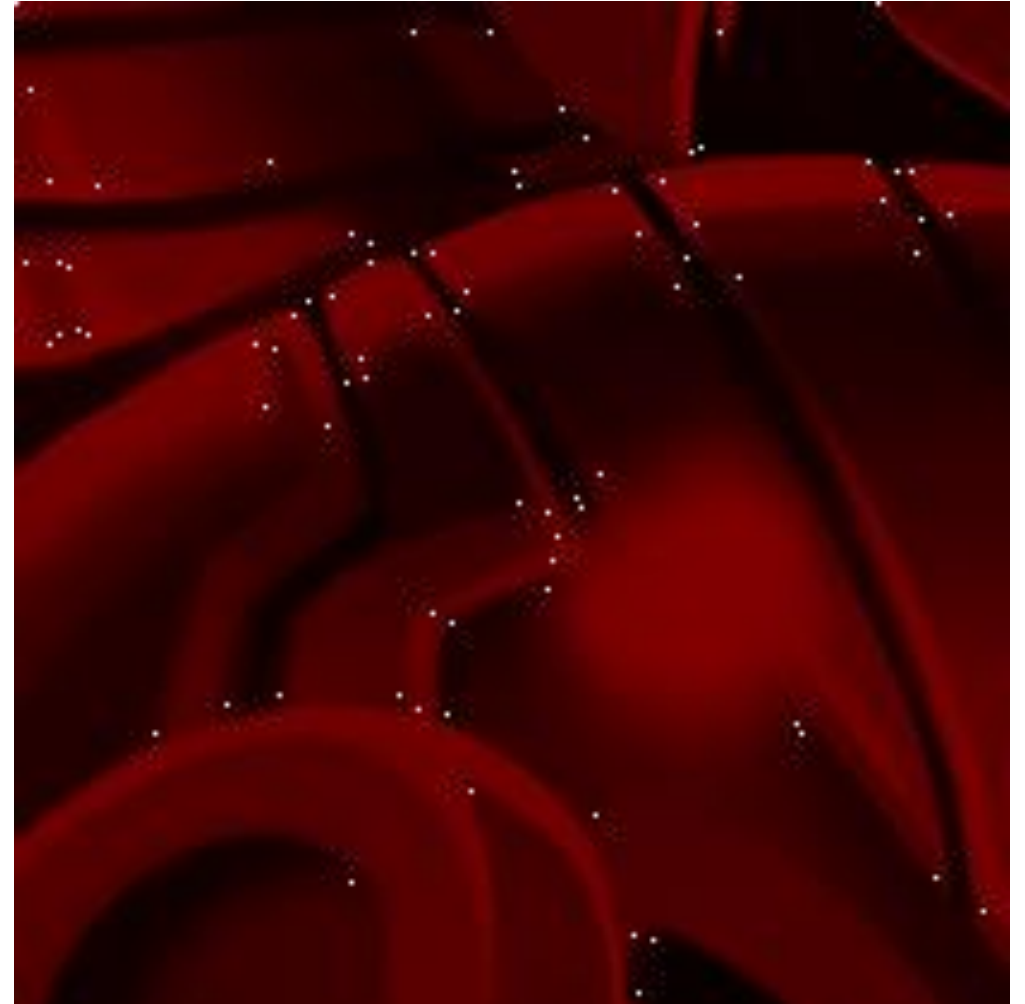
Part 1 – Non-Maximum Suppression



Corner Response Function



NMS



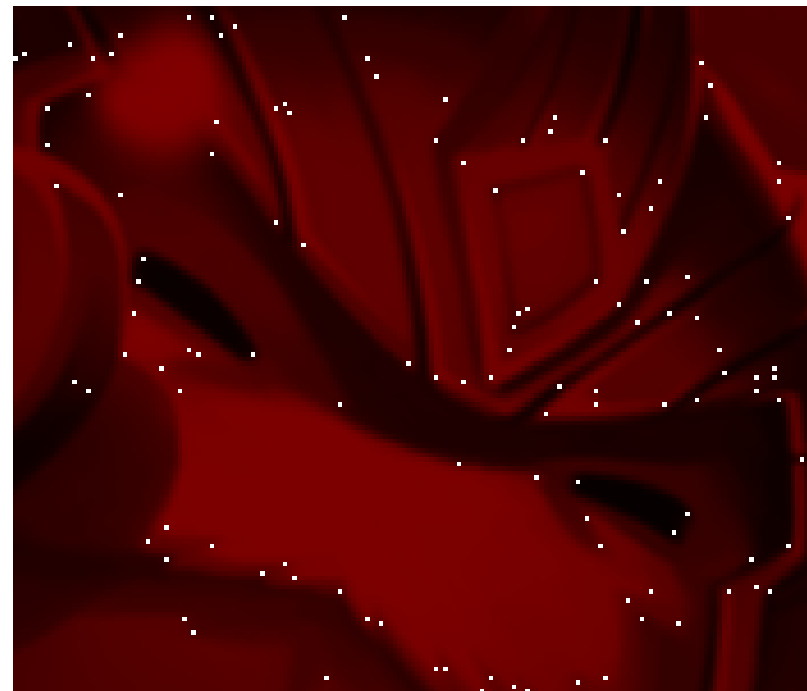
Part 1 – Comparison



Origin



Rotate



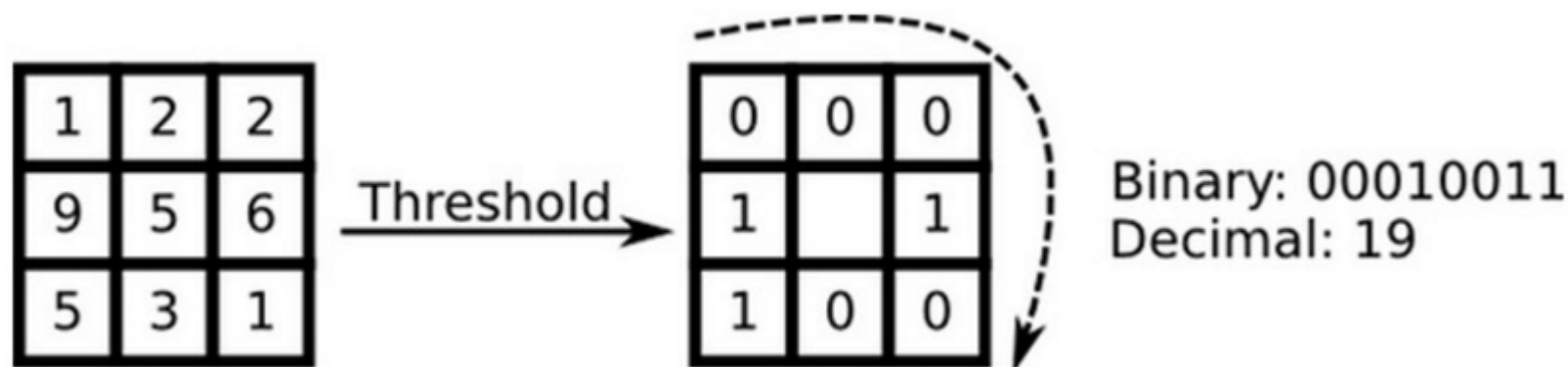
Scale

Part 1 – Comparison



Part 2 – LBP & Uniform LBP

LBP (dim = 256)



Uniform LBP (dim = 59)

Uniform :

00000000 (0 transitions), 0110000 (2 transitions) and 1100111 (2 transitions)

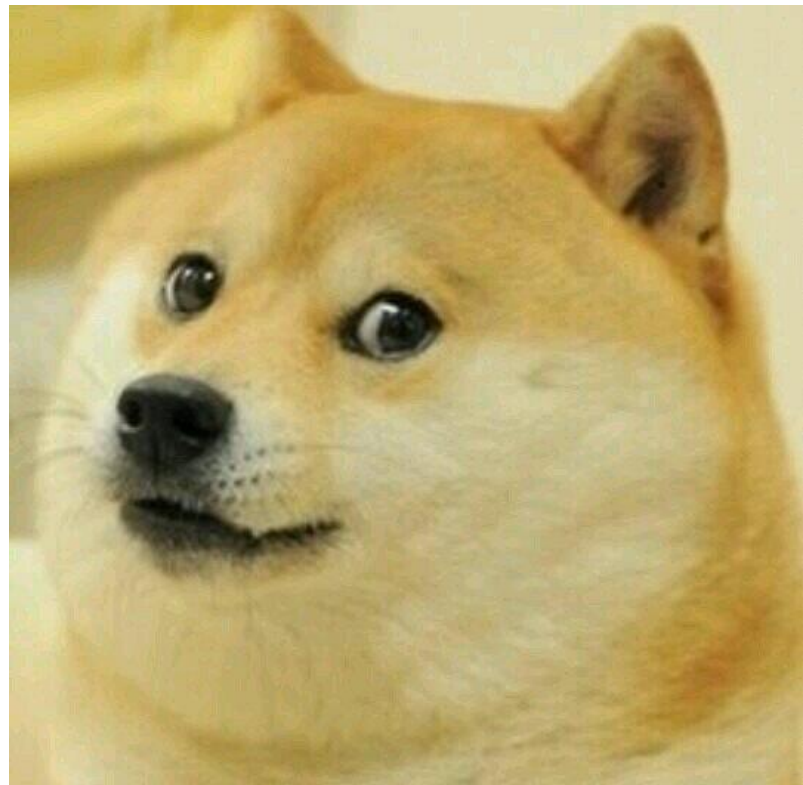


Non-uniform :

11001001 (4 transitions) and 01010010 (6 transitions)



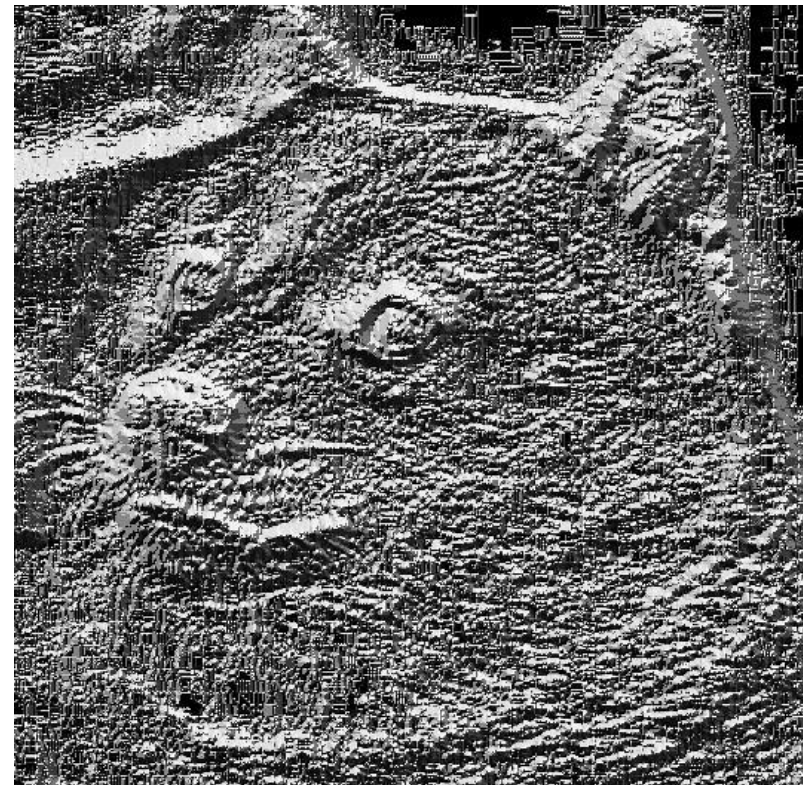
Part 2 – LBP & Uniform LBP



Doge

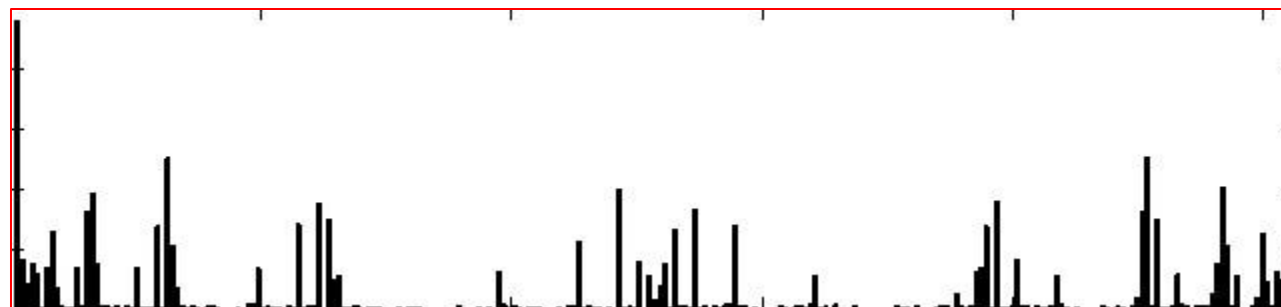
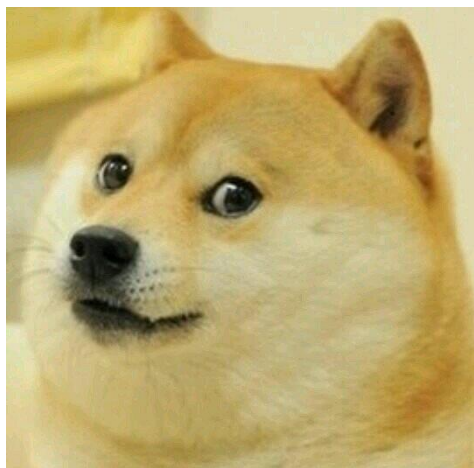


LBP image

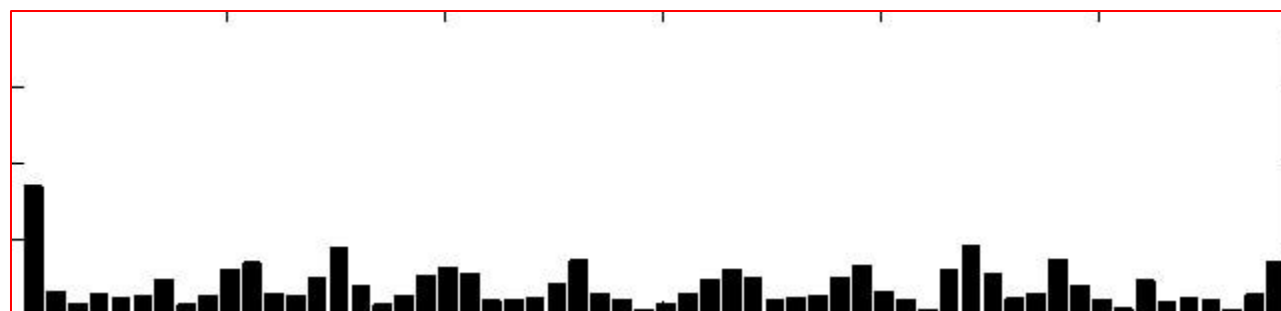


Uniform LBP image

Part 2 – Histogram

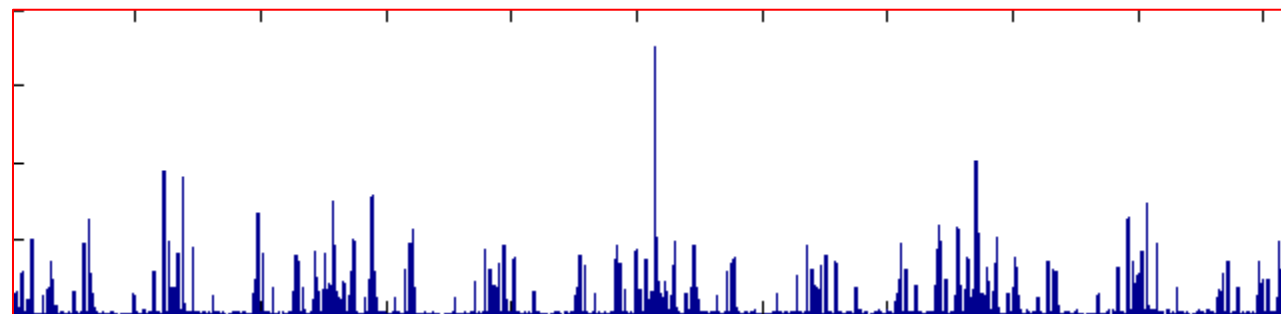
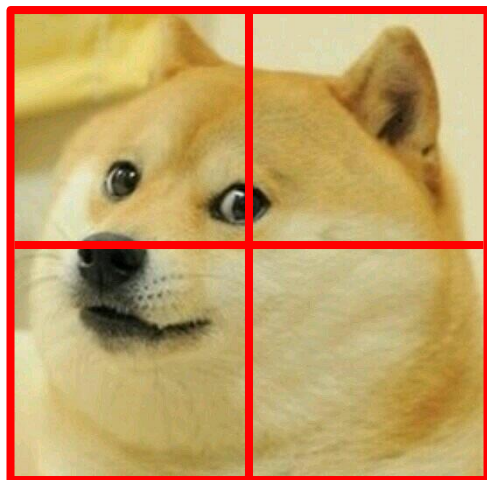


Non-uniform (dim:256)

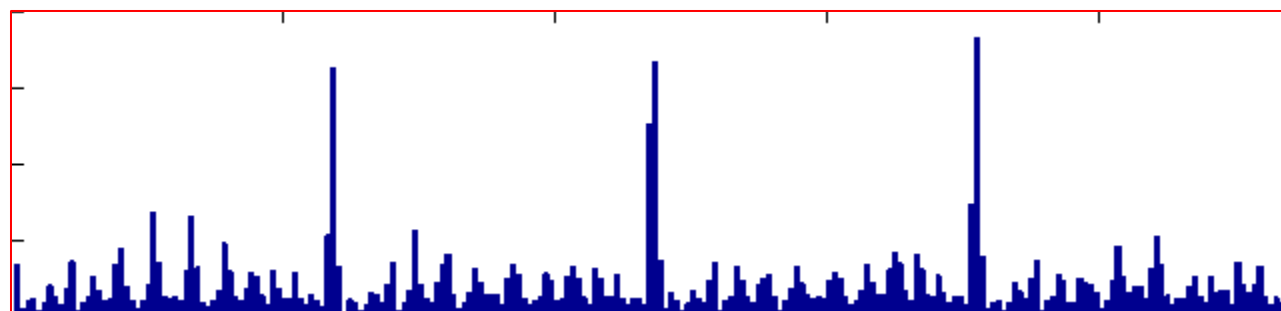


Uniform (dim:59)

Part 2 – Histogram of 2 x 2 cell



Non-uniform (dim:256 x 4)



Uniform (dim:59 x 4)