

# Project #3

assign April 22, 2020 due May 2, 2020

According to the DFT property of *Laplacian*, it appears we may implement Laplacian operation by designing a digital filter with frequency response  $H(u,v) = K(u^2+v^2)$  where  $K$  is a scaling factor to make the magnitude of  $H(u,v)$  in the range  $[0, 1]$ . Use this frequency-domain scheme to find the Laplacian image for the bird image.

Your report (Word or pdf format) should contain:

- Source codes
- Figures of the Fourier magnitude spectra of the *bird* image after applying Laplacian filtering
- Figure of the Fourier magnitude of Laplacian filter  $H(u,v)$
- Figure of the output image
- Table of top 25 DFT frequencies  $(u,v)$  after Laplacian filtering

**Upload your report to new e3 before midnight of due date!**

