ECSE 4540: Introduction to Image Processing **Fall 2019**

Lecture 8: Frequency Domain Filtering, sampling and aliasing

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It covers: Frequency-domain filtering, revisiting the frequency domain of a natural image, ideal(box) filtering in the frequency domain, ringing artifacts, boxes pulse trains and sinc functions, making a bigger box filter, circular (instead of rectangular) filters, spatial vs frequency domain tradeoffs, looking at filters in the frequency domain, Gaussian low-pass filters, highpass filters, sampling and aliasing, moire patterns.

Follows section 4.7–4.9 and 4.11 the textbook (Gonzalez and woods, 3rd ed).

References

[GW18] Gonzalez and Woods, Digital Image Processing, *Pearson*, 2018.