



Multimedia Information Coding and Description

Lab experience n. 5

1 Image Sampling

- Create a synthetic image with a rectangle in the middle, compute its transform and display it. “Sub-sample” the image by a factor of 4 in the vertical direction by multiplying it by a sampling matrix made of zeros and ones. Compute its transform and display it.
- Subsample the signal by a factor of 4 in both horizontal and vertical directions. Compute the transform and display it.
- Repeat the experiment using a quincunx grid.
- Repeat the experiments with different signals (sinusoids, gaussians, etc...)

2 Video Sampling

- Create a synthetic video with a sinusoid moving in the vertical direction. Compute and “display” the transform, comparing the effect of different speeds in both space and frequency domains.
- Subsample the signal by a factor of 4 in the time direction (multiply with a sequence of zeros and ones signal), compute and display the transform.
- Subsample the signal with an interlaced strategy, compute the transform and display it.