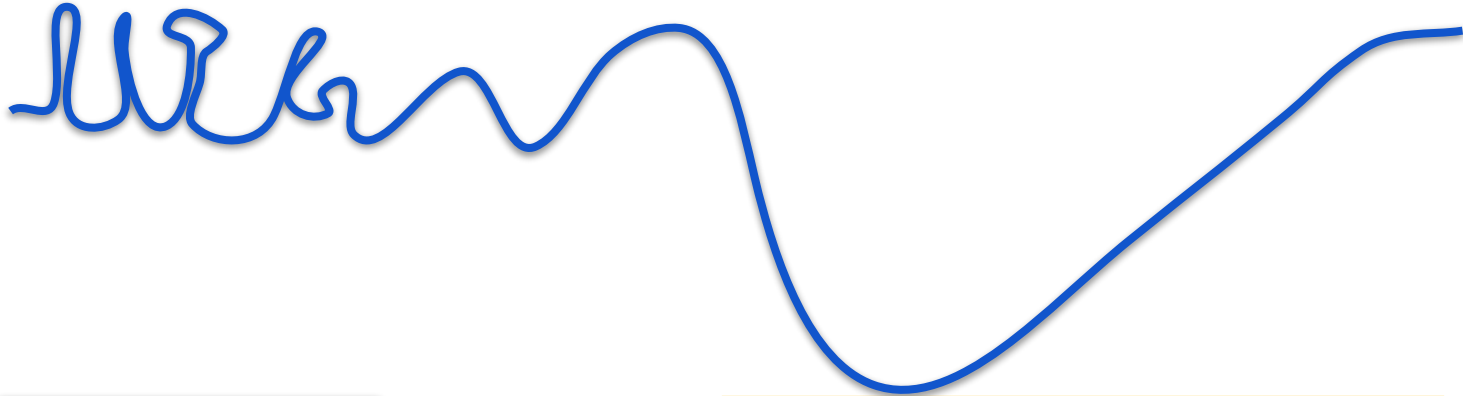


Computing with Signals



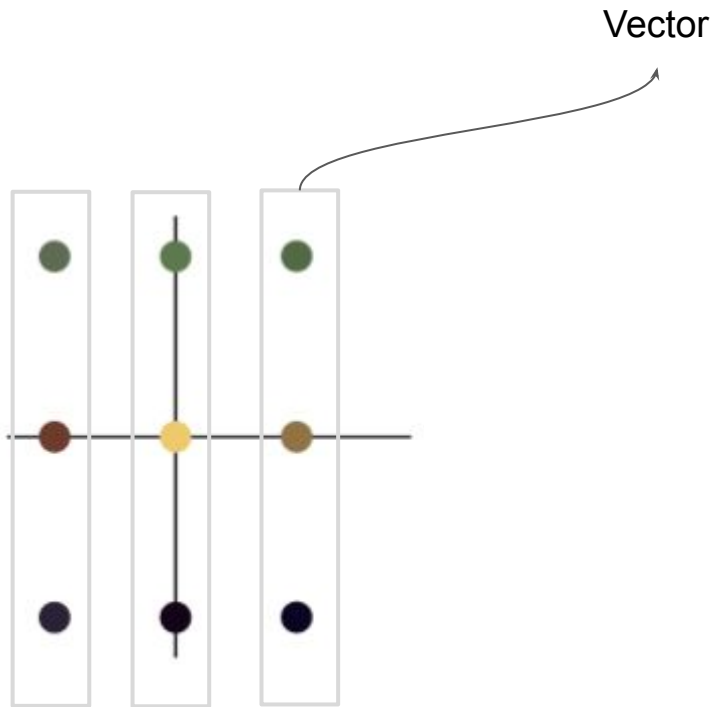
DA 623

Jan - May 2023

IIT Guwahati

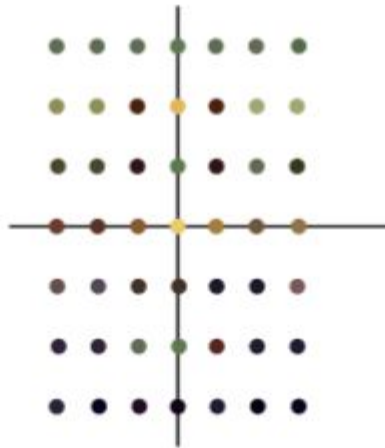
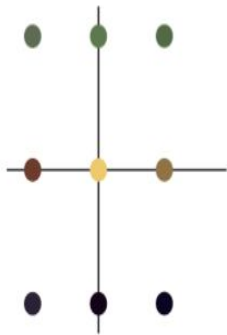
Instructors: Neeraj Sharma

Lecture-25 [27-Mar]

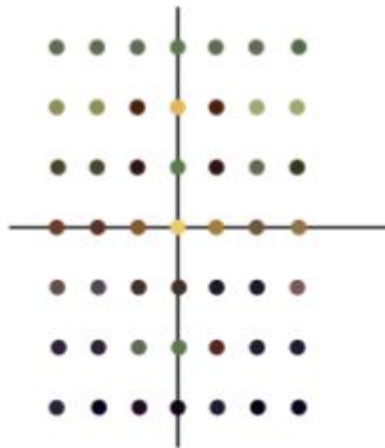
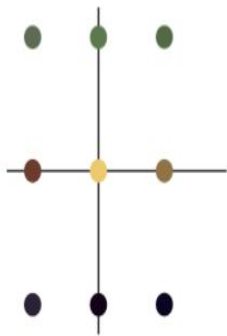


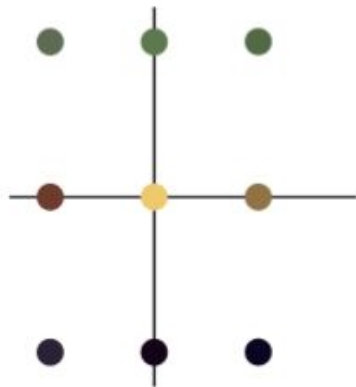
Source: Adapted from Peter Bloem <https://peterbloem.nl/blog/pca-2>

Put more
vectors
together

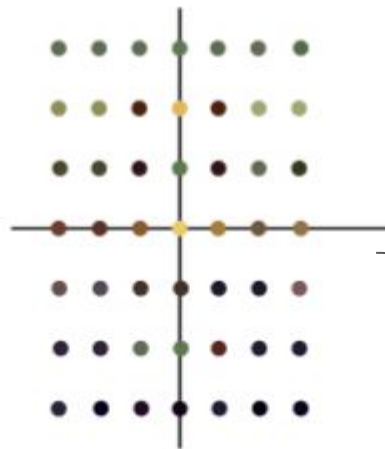


Put more
vectors
together





Put more
vectors together



And more

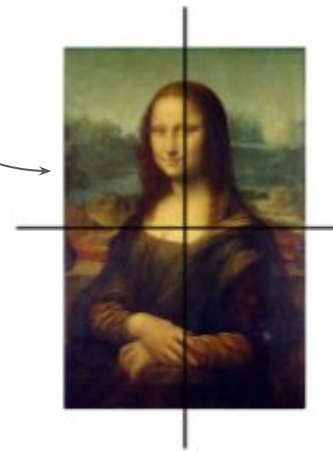
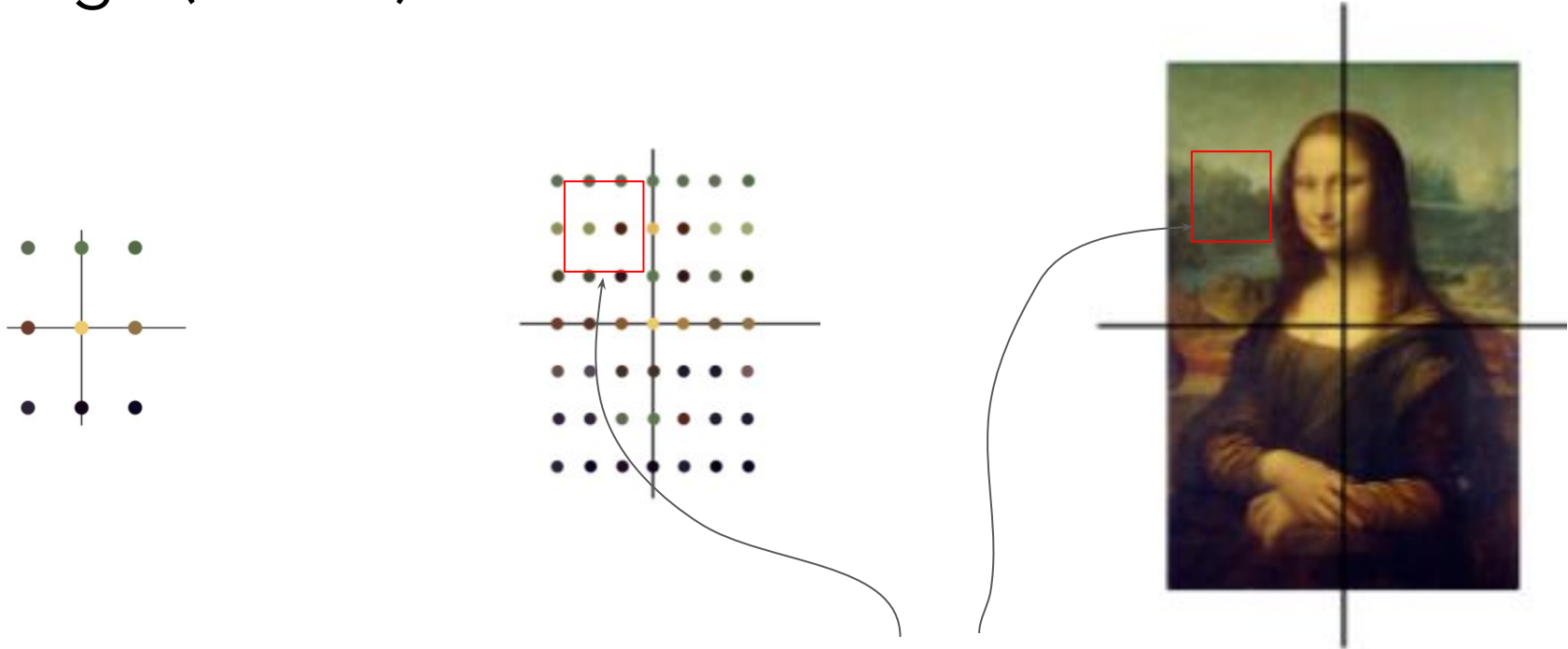


Image (matrix) is a collection of vectors!



Can we search for patterns across the collection of these 1-D vectors?

Can we search for patterns across the collection of these 1-D vectors?

2D Fourier transforms and applications

<https://www.robots.ox.ac.uk/~az/lectures/ia/lect2.pdf>

We will cover the material from the above slide deck shared by Prof. A. Zisserman

Lecture 2: 2D Fourier transforms and applications

B14 Image Analysis

Michaelmas 2014

A. Zisserman

Let's go to
the
sliddeck

- Fourier transforms and spatial frequencies in 2D
 - Definition and meaning
- The Convolution Theorem
 - Applications to spatial filtering
- The Sampling Theorem and Aliasing

Much of this material is a straightforward generalization of the 1D Fourier analysis with which you are familiar.

Thank you!