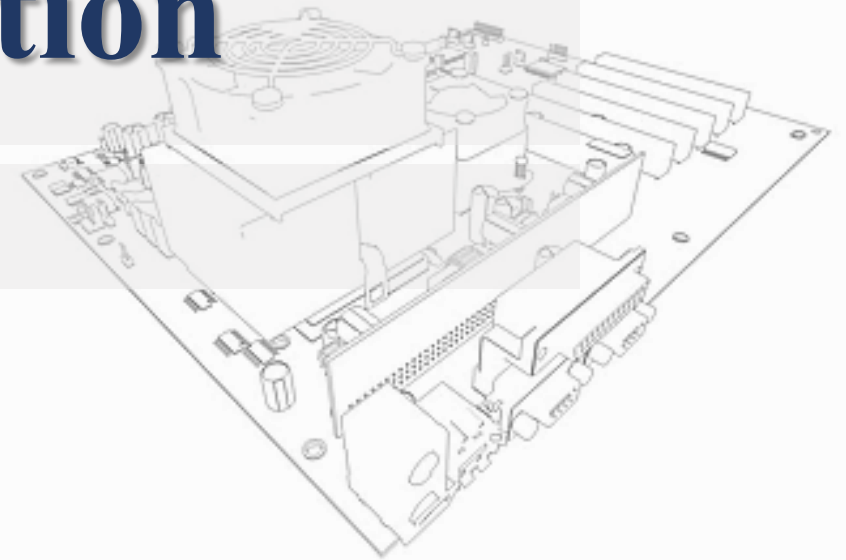
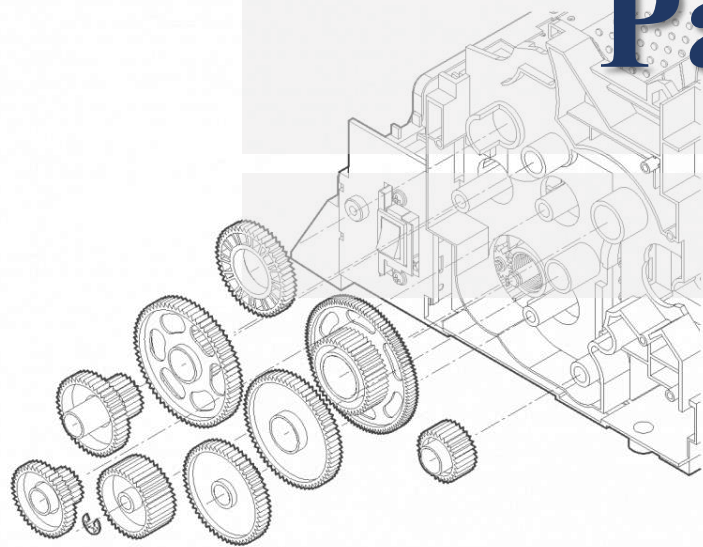
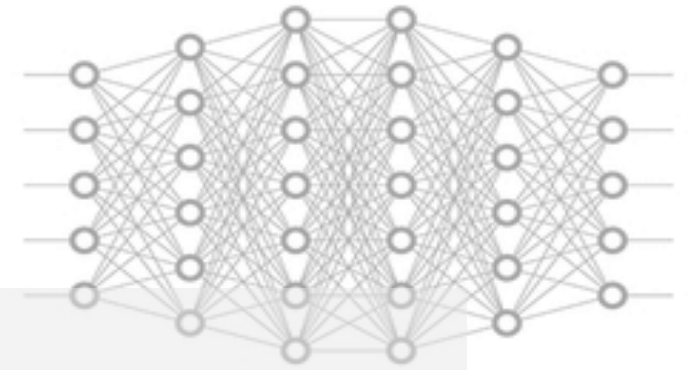
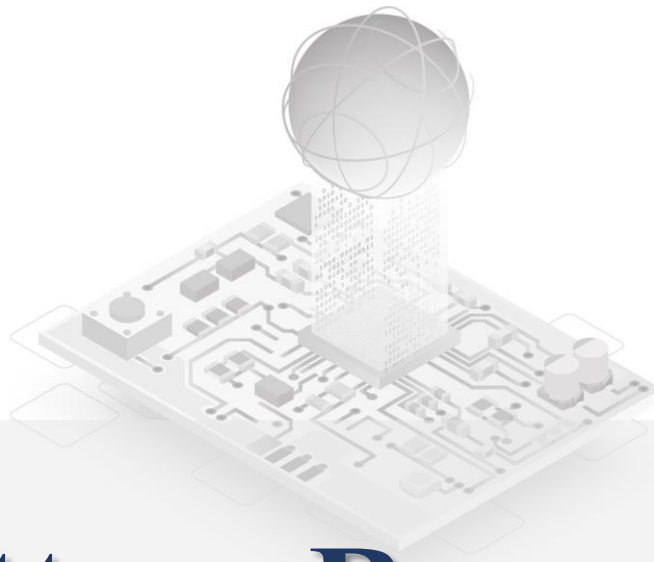
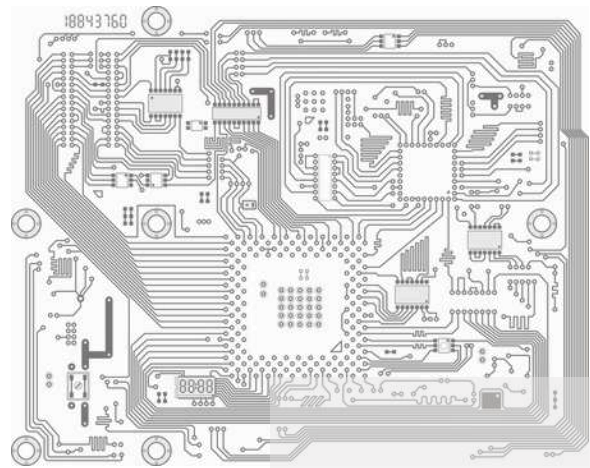


Pattern Recognition

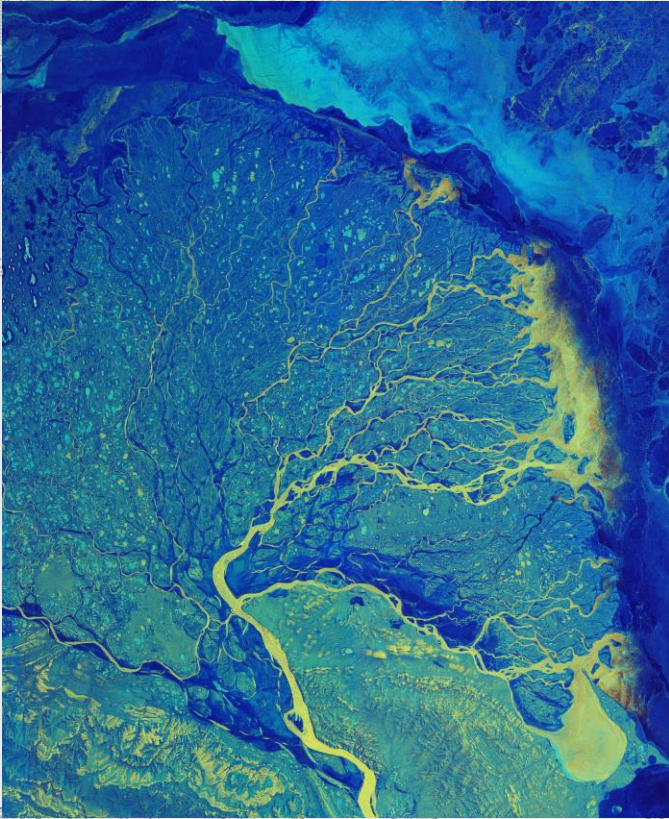
From Curve Fitting to Generalization

$\Delta \epsilon \delta_x$
[A I E d X]



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Case Study

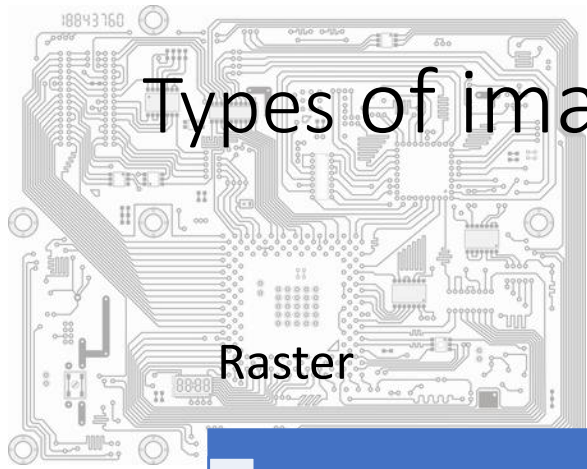


Rhine Delta
Pic Credit: European Space Agency



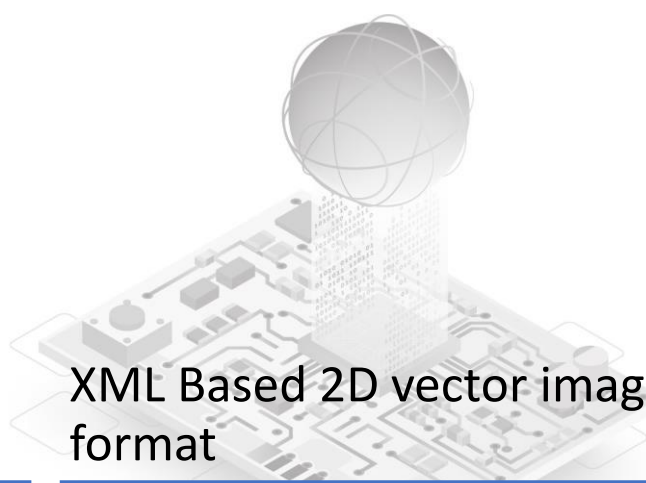
Ganges Delta in India & Bangladesh
Pic Credit: NASA

River System / Fluvial Networks – Can you predict this pattern

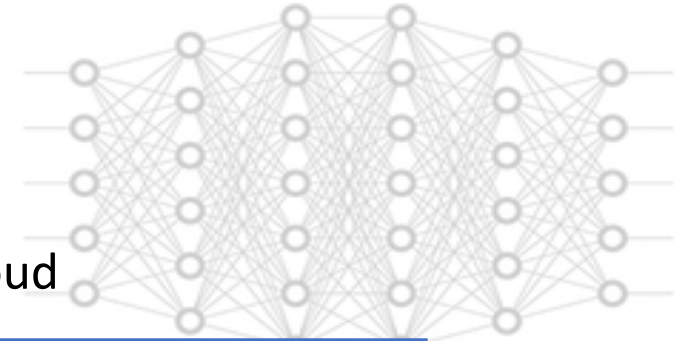


Types of images

Raster



XML Based 2D vector image format



Point Cloud



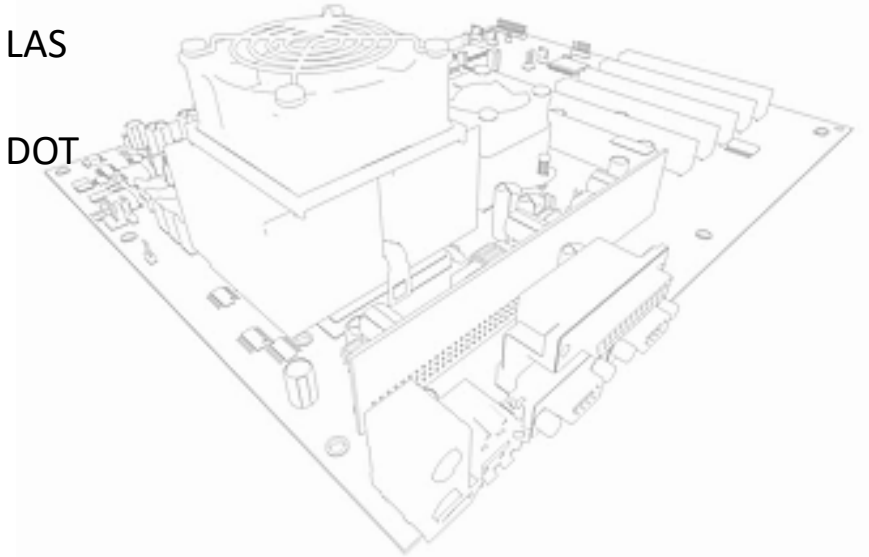
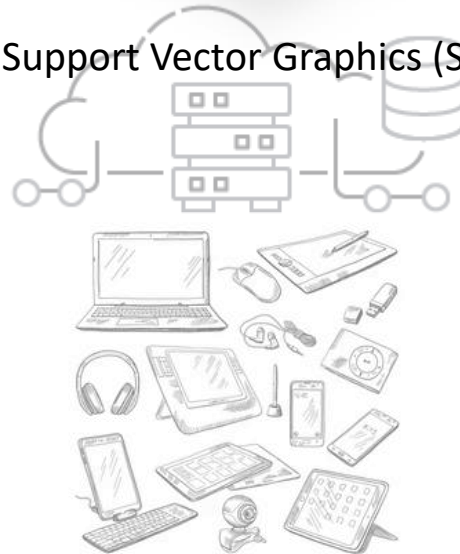
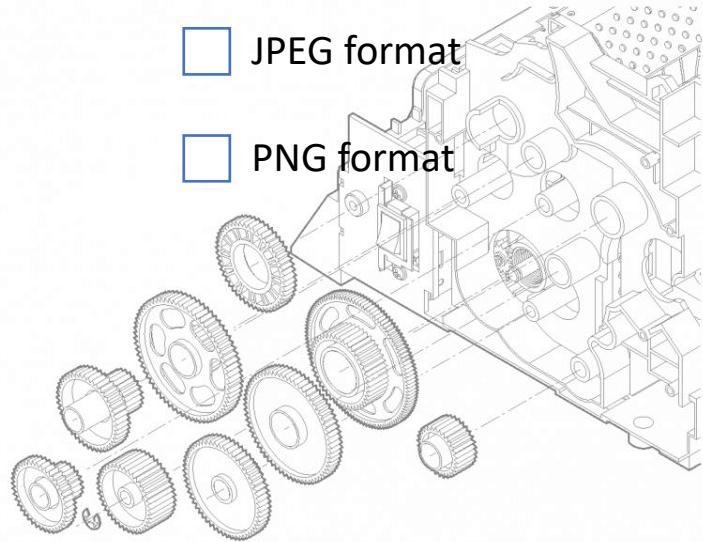
☐ JPEG format

☐ PNG format

☐ Support Vector Graphics (SVG)

☐ LAS

☐ DOT



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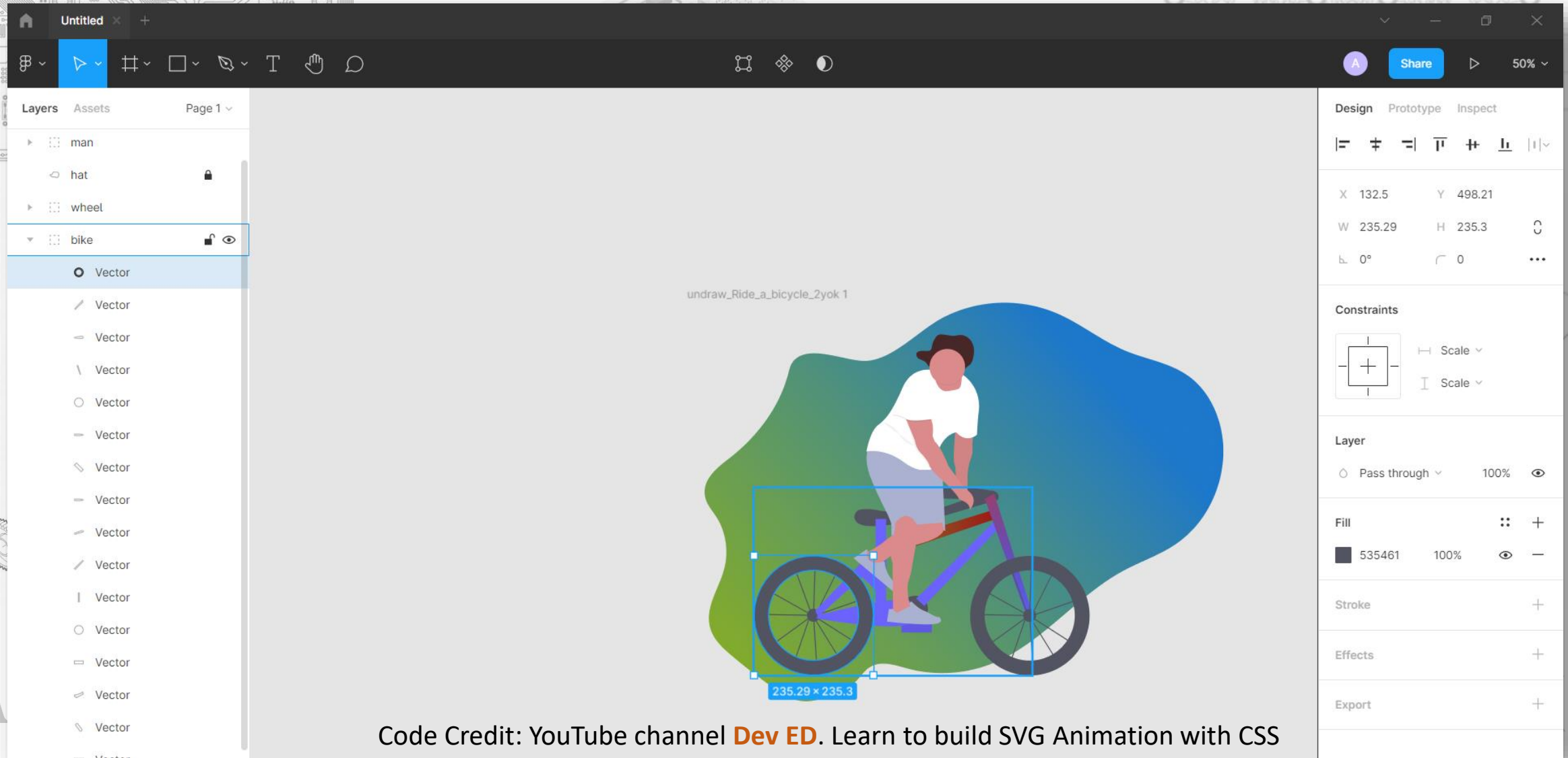
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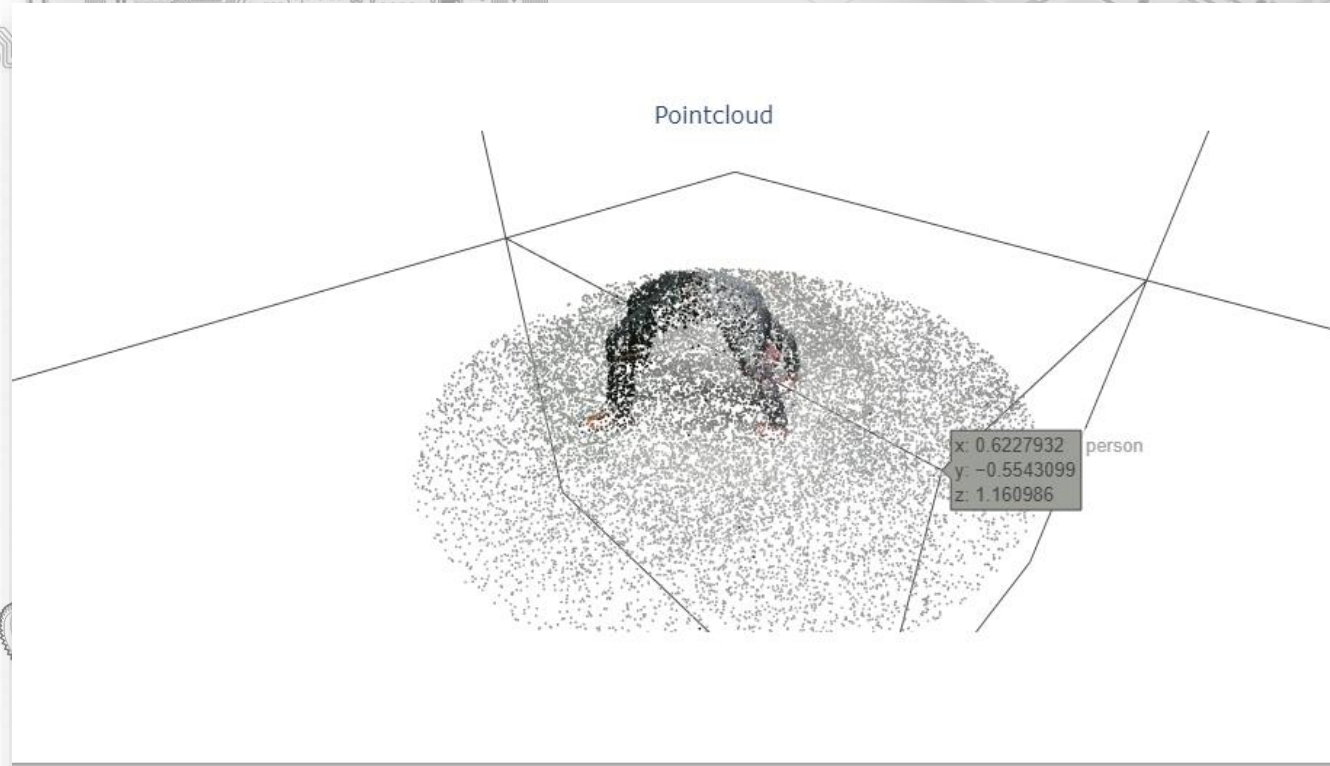
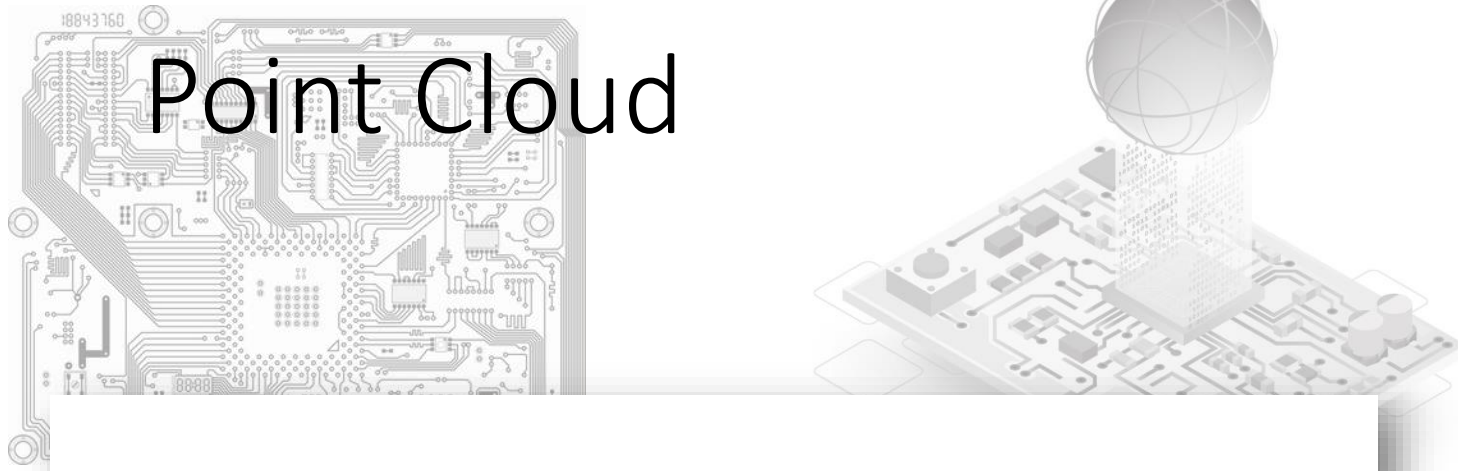
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Support Vector Graphics

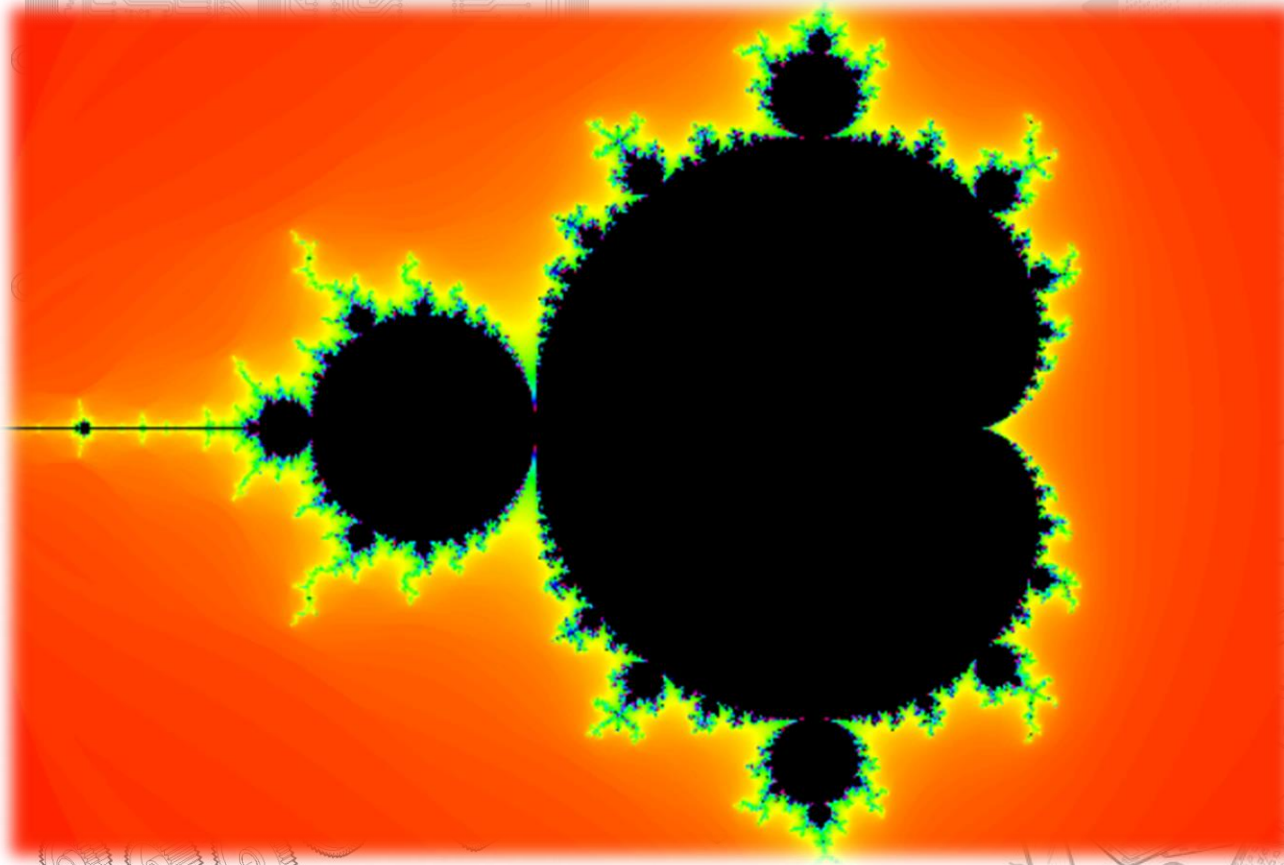


Code Credit: YouTube channel **Dev ED**. Learn to build SVG Animation with CSS

Point Cloud



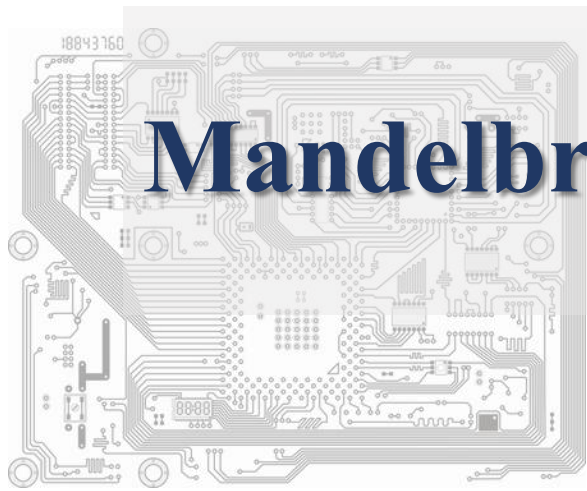
Mandelbrot Set – Demo



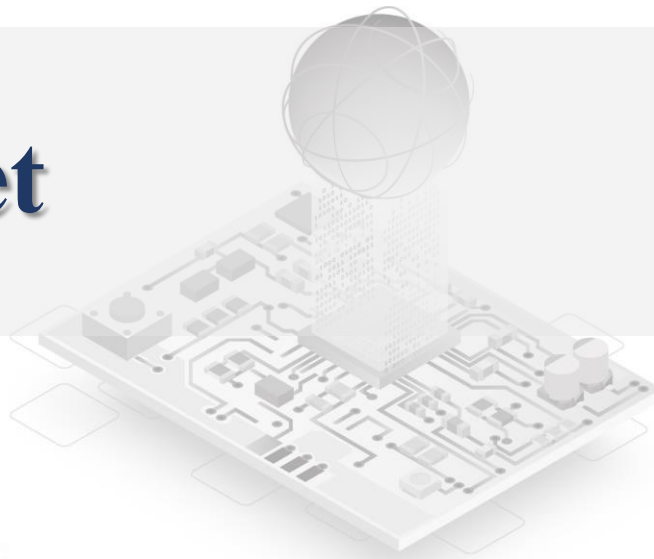
Pic Credit:

1: <https://www.codingame.com/playgrounds/2358/how-to-plot-the-mandelbrot-set>

2 : https://en.wikipedia.org/wiki/Mandelbrot_set



Mandelbrot Set



Simple equation can create complex system where exact pattern can't be predicted easily (or may be can't be predicted at all)

Chaos: Small Changes can have large impact on system

Causality: Which factor influences outcome may not be clear

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Pattern Recognition : Trying to sub divide the field

(Demo)

