

# *Learning Lab*

**StartVaardig**



**Motoric Skills Development**

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# T-SNE

## What is t-SNE ???

- T-distributed stochastic neighbor embedding
- Visualizing high-dimensional data



## What is it for

- Data exploration
- Data visualization
- Identifying non-linear connections



## How does it work?



- Gaussian distribution
- Cauchy distribution
- Kullback-Liebler divergence



# Advantages



- Identify clusters
- Helps understand data
- Dimension reduction



# Disadvantages

- Understanding parameters
- Choosing parameterization



Fig 1: t-SNE without  
fine tuning



Fig 2: t-SNE with fine  
tuning

Problems





Fig 3: normal  $t$ -SNE

Problems



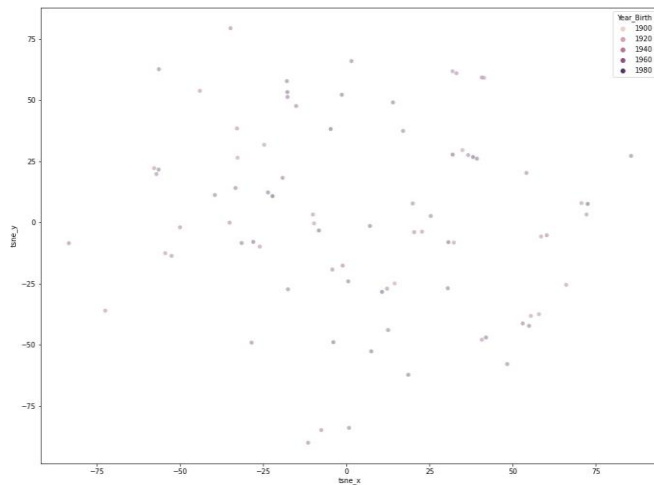


Fig 3: Perplexity: 2

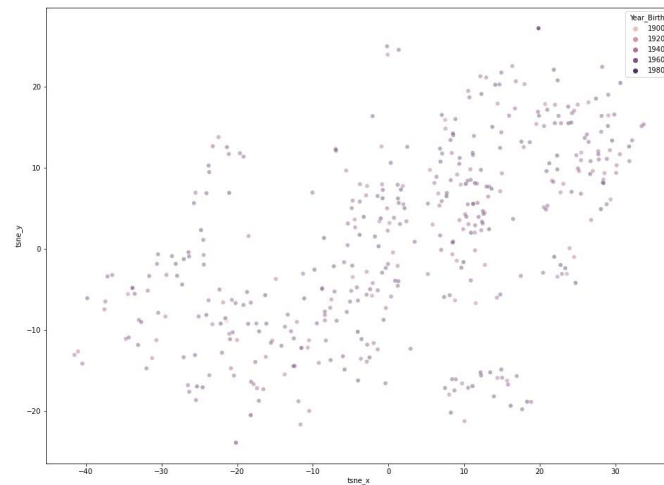


Fig 4: Perplexity: 100

## Needed steps

- Encode strings
- Scale data
- Unscale data



# code EXAMPLE



**your turn**

Your task



# Kahoot!

Code:

on screen



## Questions



A photograph of three young girls in a starting crouch on a track, overlaid with a dark semi-transparent filter. The girls are smiling and looking towards the camera. The girl in the foreground is wearing a red and white striped shirt and red shorts. The girl in the middle is wearing a red and white striped shirt and red shorts. The girl in the background is wearing a light green shirt and white shorts. The text "thank you !" is centered over the image in a bold, orange, sans-serif font. The text is flanked by several vertical white lines of varying heights and a horizontal white line. There are also orange dots on either side of the text.

**thank you !**



**Questions**

# References



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