

# HUMAN DATA ANALYTICS: LAB 1

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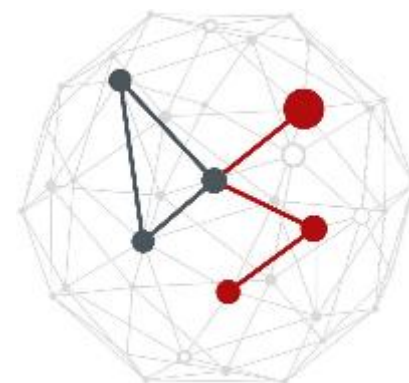
Instructor

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# Lab 2

- PCA and Clustering

- The challenge

- Compress an ECG signal

- You will learn to:

- Implement PCA from scratch and using Python libraries
    - Use PCA to compress ECG signals
    - Compress data using clustering
    - Combine clustering and PCA to compress data
    - Evaluate the compression quality
    - Visualize different type of data in Python

# Objective

- You will design and apply on an ECG signal three compression techniques based on:
  - PCA
  - K-means
  - PCA + K-means combined

# References from theory

- L01: Principal Component Analysis (PCA)
- L02: Clustering – K-means & X-means
- L06: Unsupervised representation of ECG signals

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