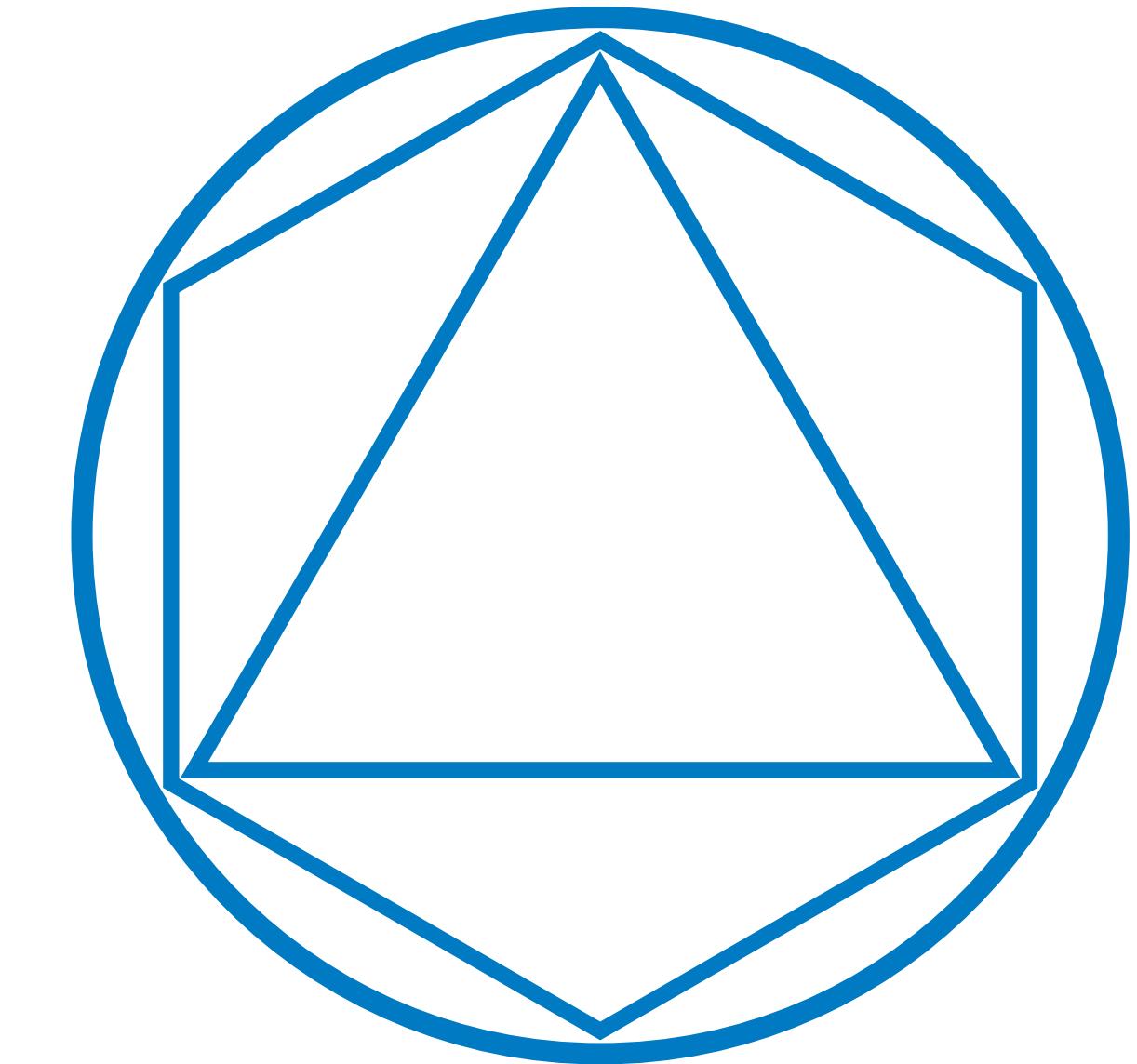


# STOCHASTIC OPTIMIZATION IN MACHINE LEARNING

Fin Bauer · Stanislas Chambon · Roland Halbig · Stefan Heidekrüger · Jakob Heuke



## FEATURE EXTRACTION AND DATA PROCESSING

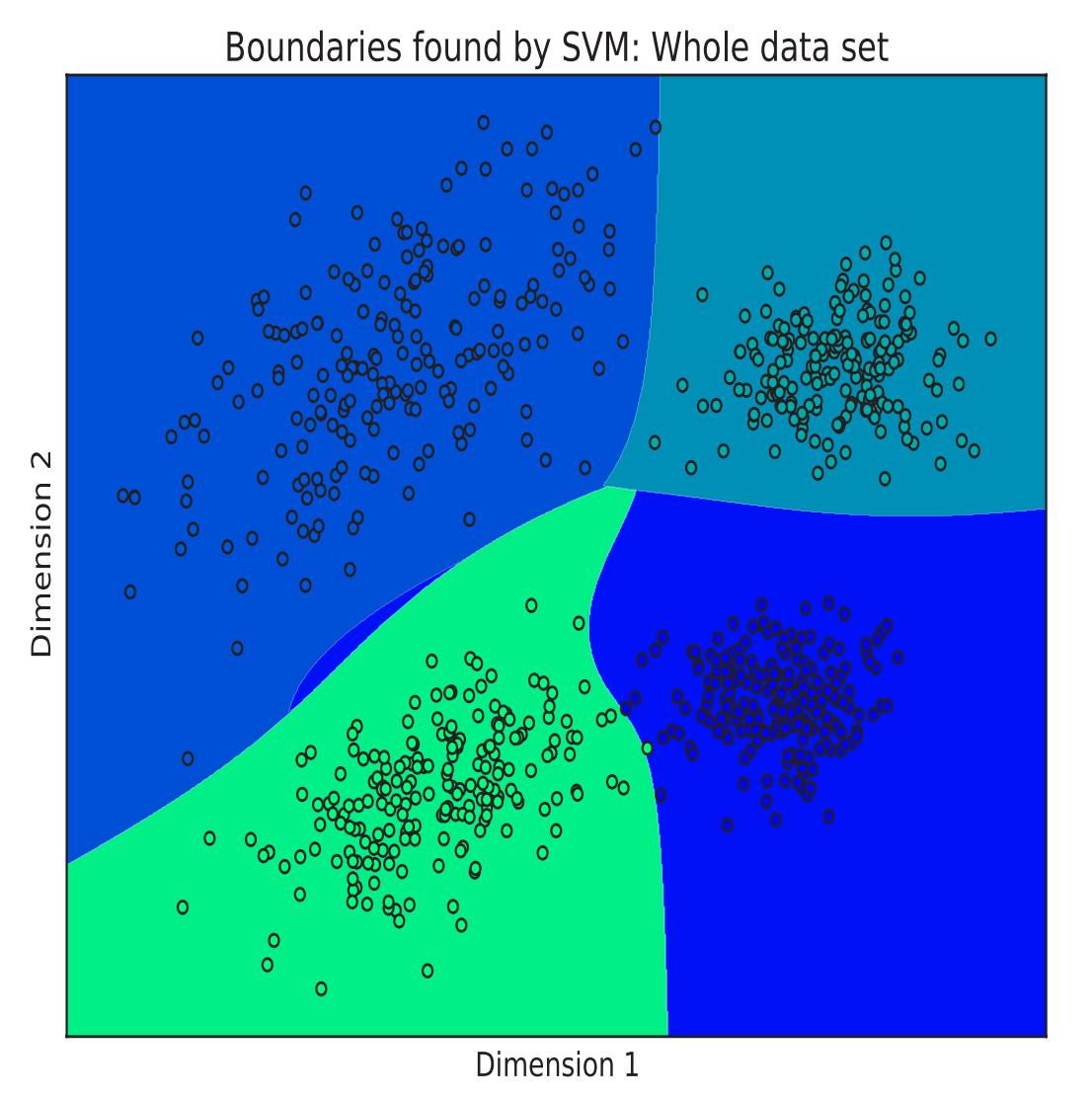
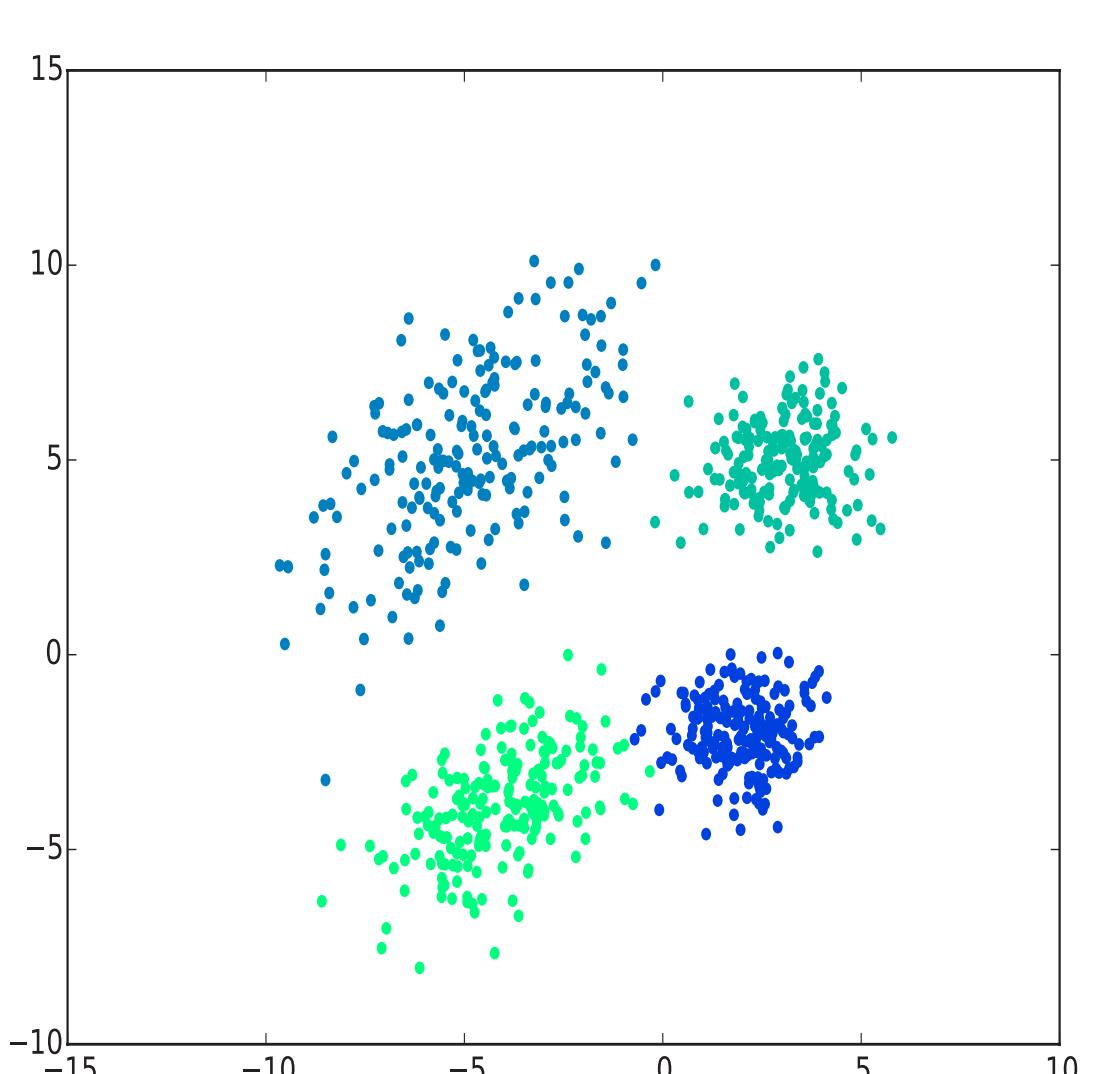
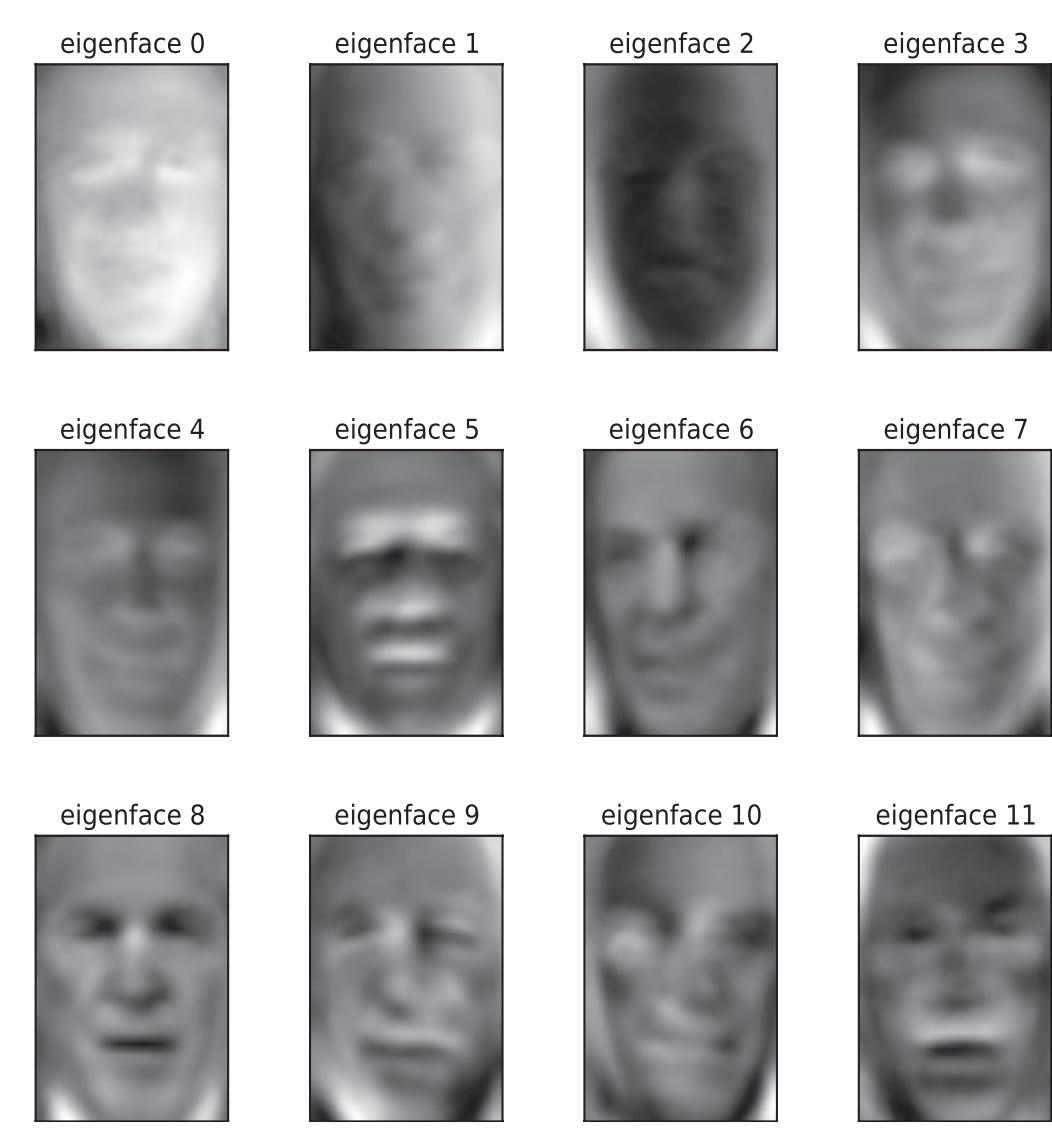
What makes each person individual?  
How are they different from another?  
How can this information be represented, so that

- a computer can read it
- computations can be done efficiently
- as little irrelevant/redundant information as possible is saved?

One possible answer in this case: **Dictionaries**

A dictionary a human might use to recognize faces:    A dictionary a computer might use to do the same:

Eye Color,  
Hair Color,  
Hair Length,  
Nose Shape,  
Skin Color,  
Mouth Shape,  
Lips Color,  
Ears Shape,  
...



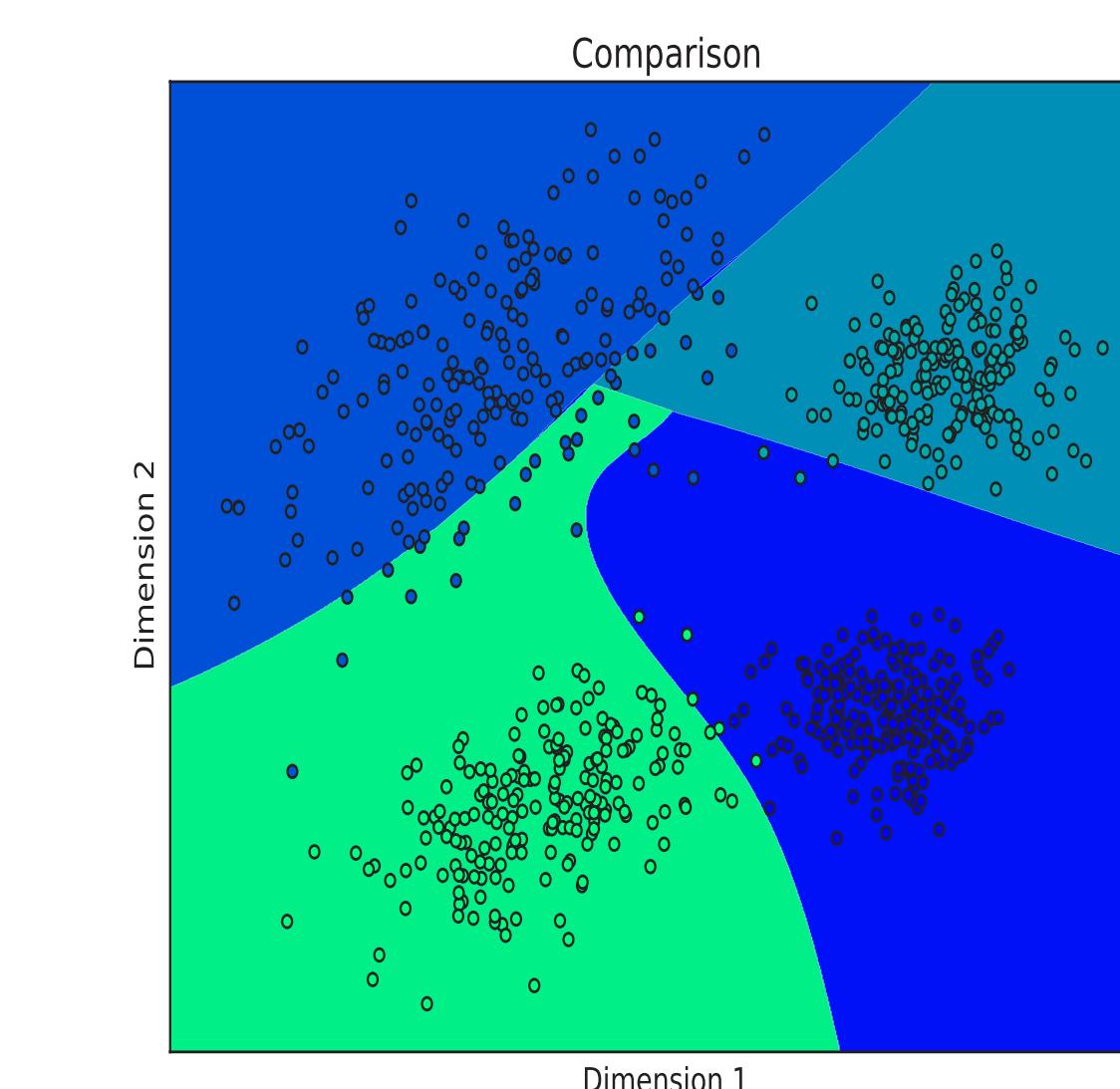
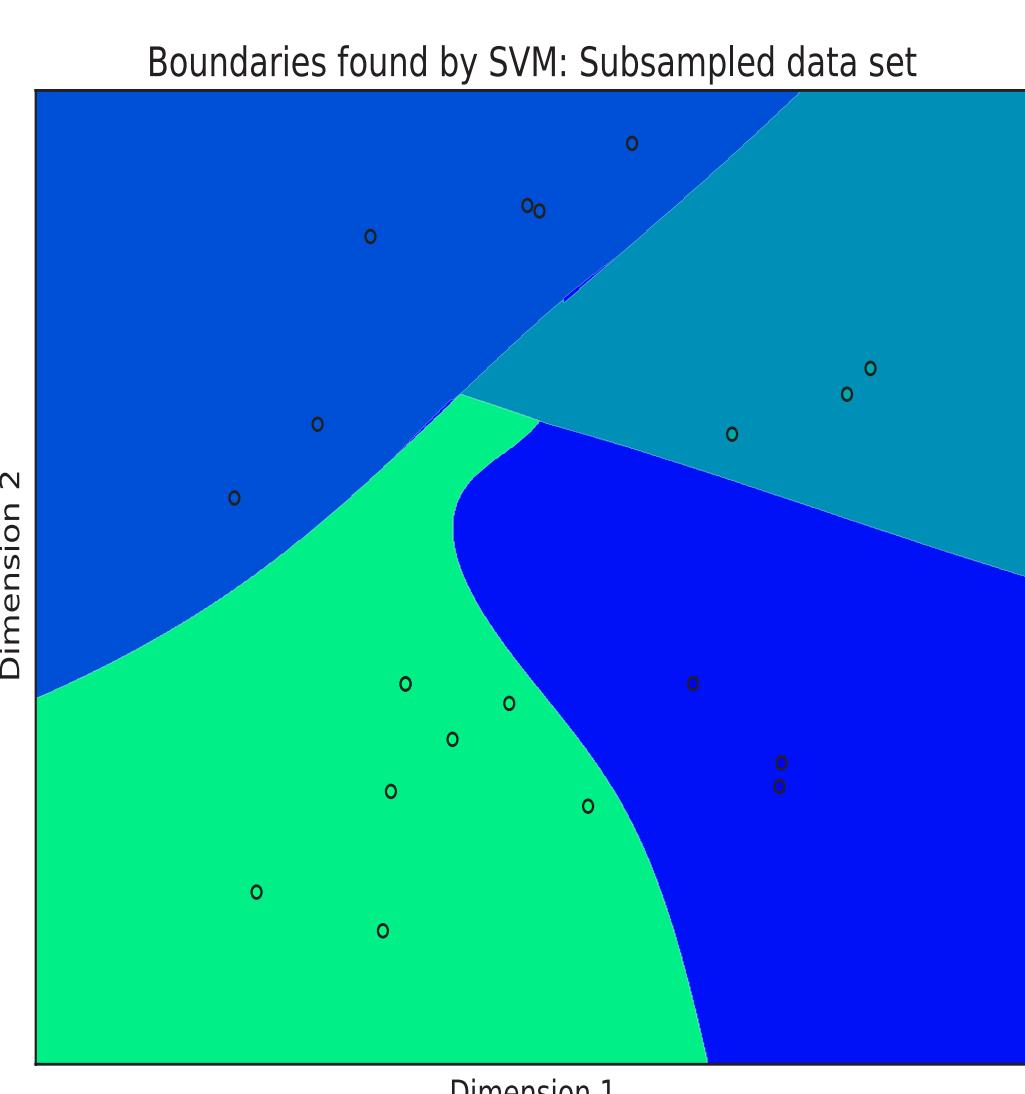
## USING STOCHASTIC PROGRAMMING TO “TRAIN” A MACHINE LEARNING ALGORITHM

Awesome text that is explaining what is happening in the pictures on the left and right.

Also what the idea behind stochastic methods is.

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## CONCLUSIONS: THE POWER OF MACHINE LEARNING

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