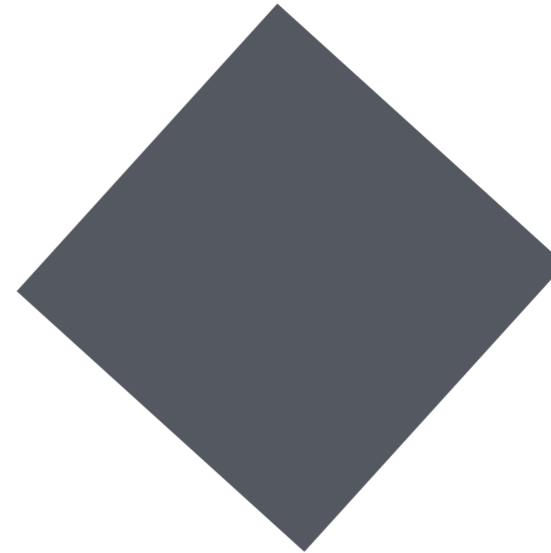University
of Basel

Basic notions of shape modelling

What is a shape

Classical definition:

All geometrical information that remains when location, scale and rotational effects are filtered out from an object.

What is a shape

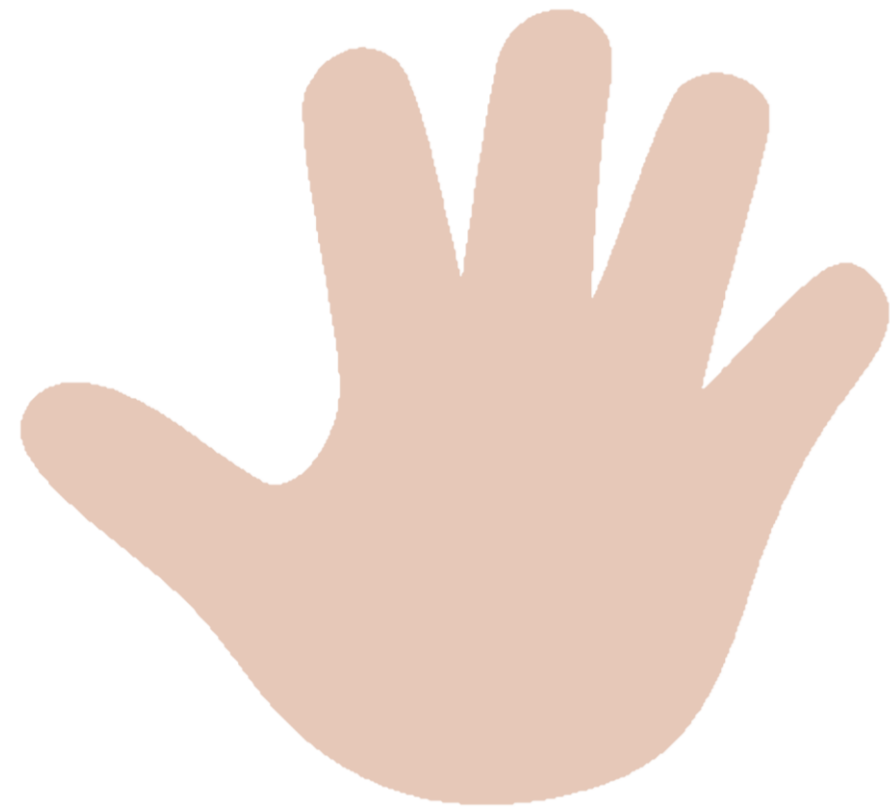

Our definition:

All geometrical information that remains when location and rotational effects are filtered out from an object.

Shape and size

In biology, size and shape are often correlated.

Shape families
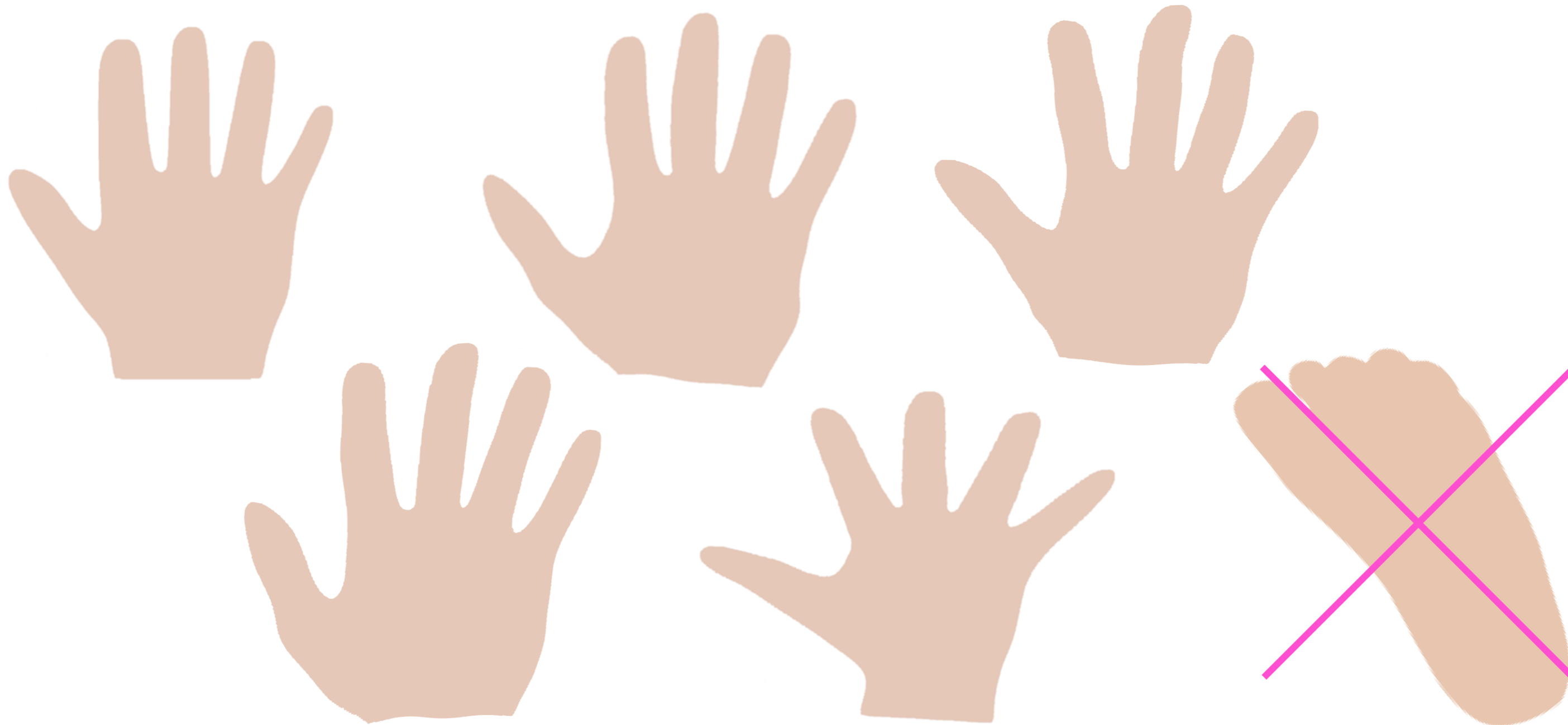
The family of triangle shapes

Shape families

The family of hand shapes

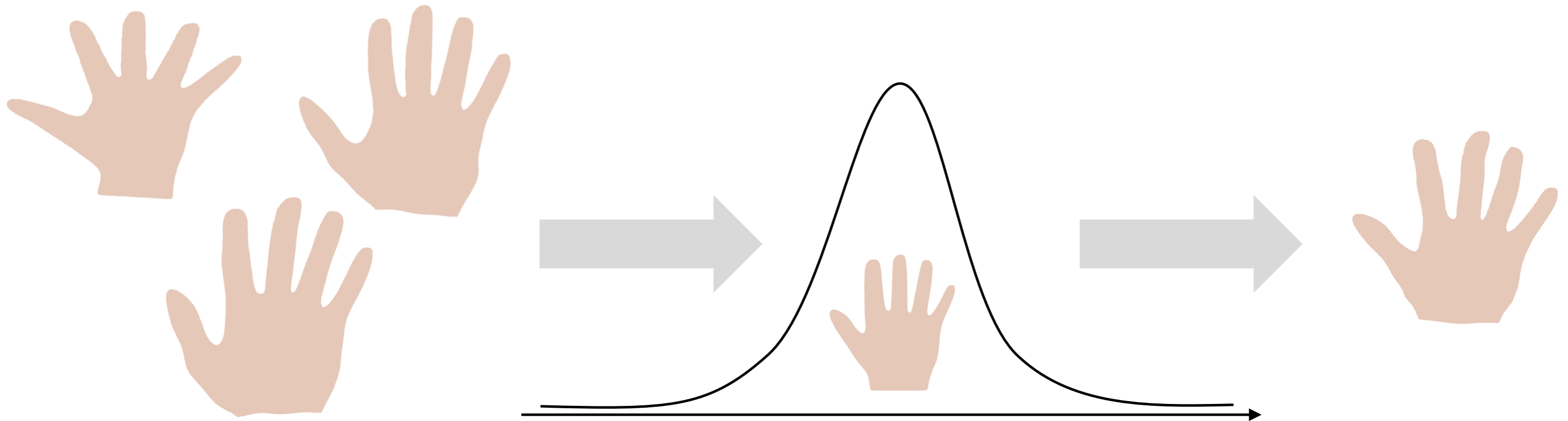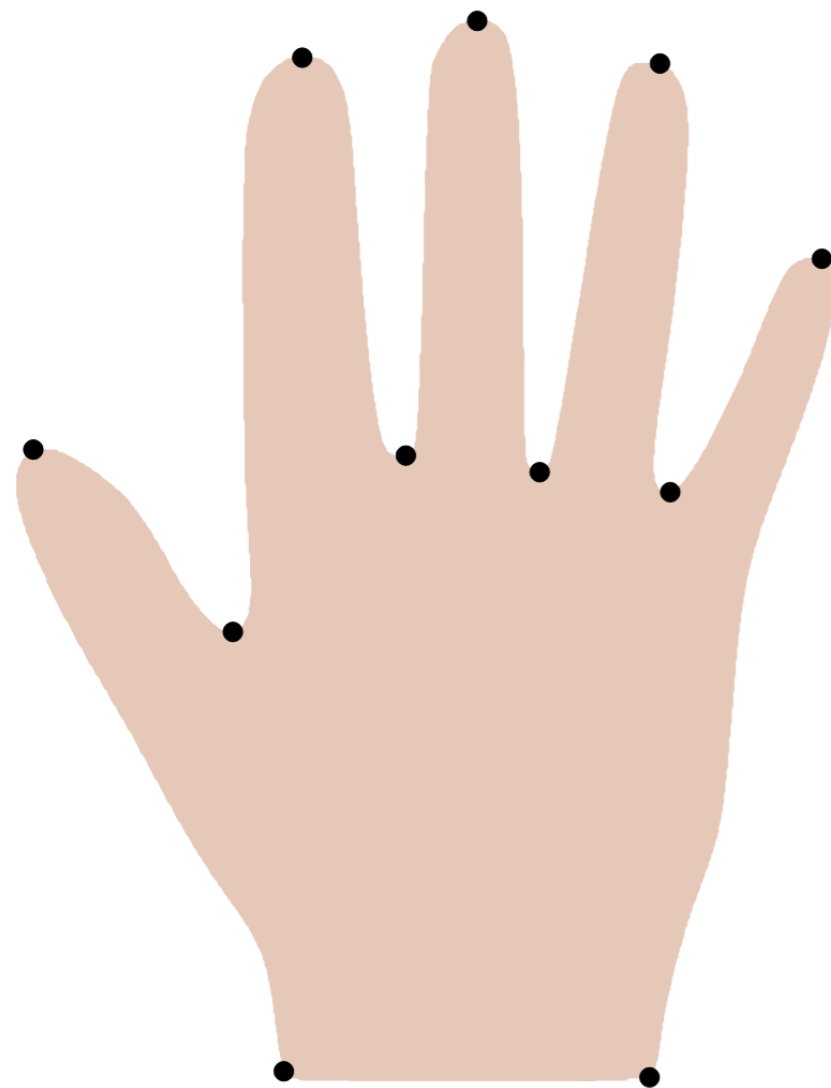# Shape families

The family of hand shapes

Statistical shape models
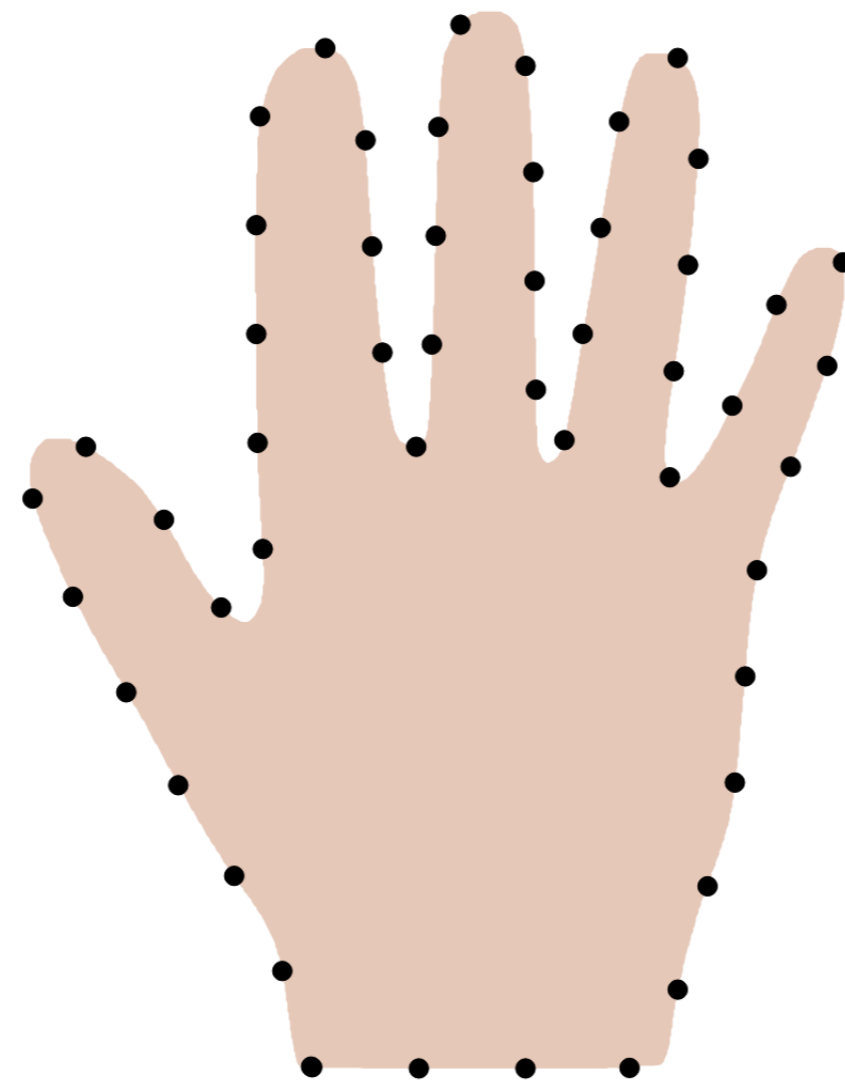
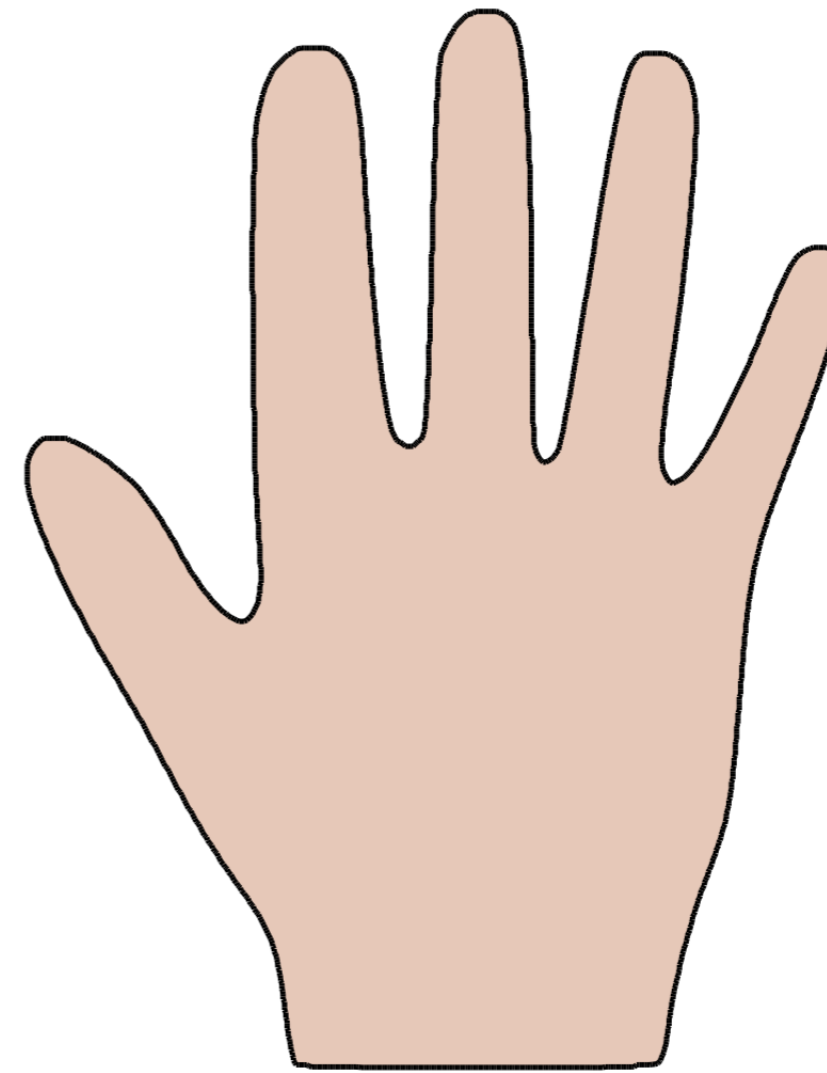Learn from examples how to generate new shapes

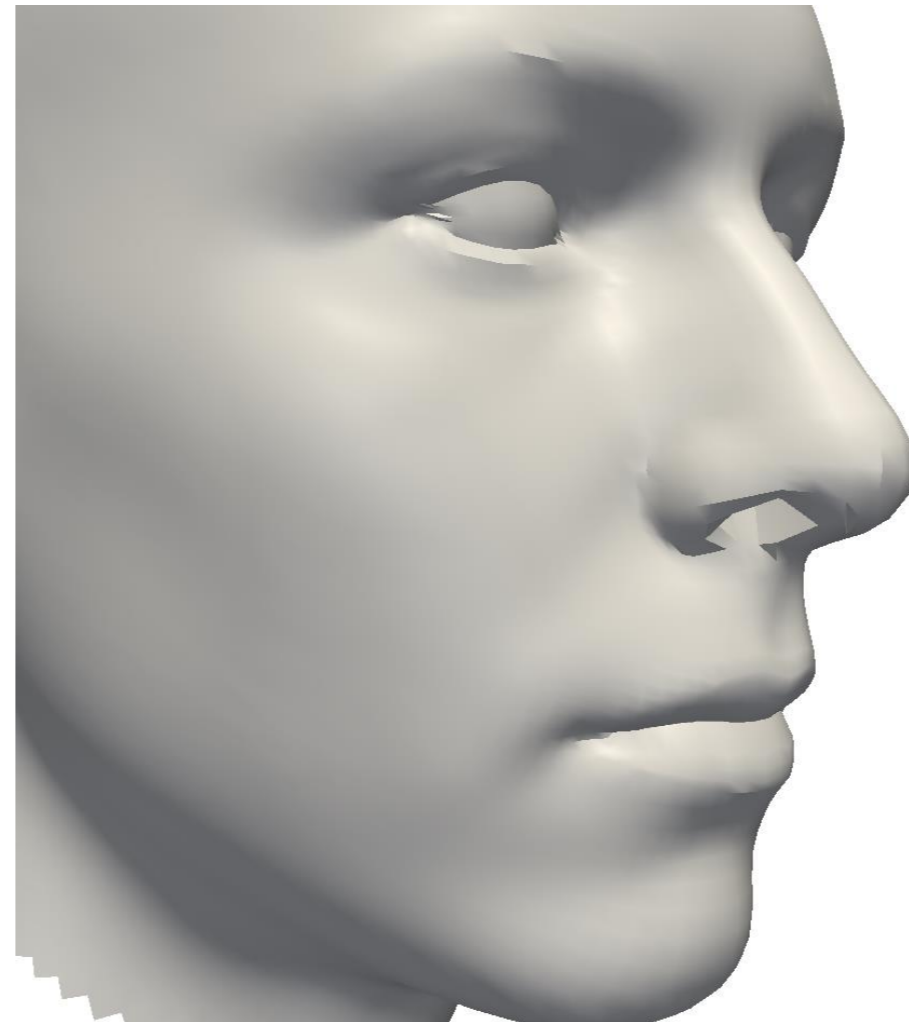**Example shapes**
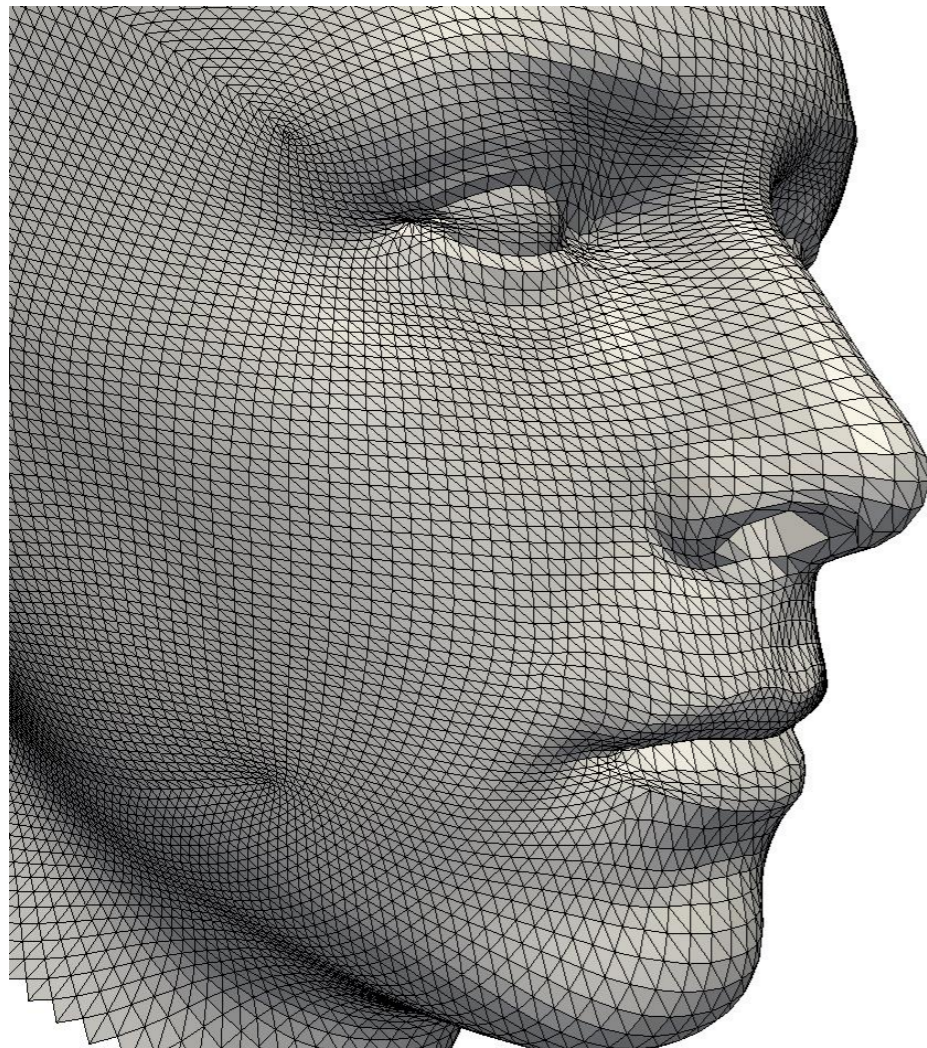
Shape representation

Landmarks

Dense points

Contour

Shape representation

Surface points

Point distribution models

- How can the points move, such that the shape remains within the family?

- Assumption: Shape variations within the shape family can be modelled by a normal distribution.