Pattern recognition (INFOPR)
9 mei 2005

Opgave 1   Statistics

a) What is a covariance matrix?

b) What is a mixed probability density function?

Opgave 2   Feature analysis

What is non-parametric supervised learning? How does the k-nearest neighbour estimator work?

Opgave 3   Classifier

What is a proportional classifier?

Opgave 4   Error analysis

What is the Bayes error probability? Give an example for two classes A and B.

Opgave 5   Pattern matching formulation

a) Give a formulation of the computation problem of geometric pattern recognition.

b) Give a formulation of the optimization problem of geometric pattern recognition.

Opgave 6   Distance

What is the triangle inequality of a distance function? Give an example of a distance function *not* satisfying this condition.

Opgave 7   Distance

What is the Minkowski-distance between two k-dimensional points?

Opgave 8   Transformations

What is a 2D similarity transformation, and what are its degrees of freedom?