

DEPARTEMENT INFORMATICA EN INFORMATIEKUNDE, FACULTEIT BÈTAWETENSCHAPPEN, UU.
IN ELEKTRONISCHE VORM BESCHIKBAAR GEMAAKT DOOR DE $\mathcal{I}\mathcal{B}\mathcal{C}$ VAN A–Eskwadraat.
HET COLLEGE INFOPR WERD IN 2004/2005 GEGEVEN DOOR REMCO VELTKAMP.

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?