11. Exercise sheet

Hand in solutions until Tuesday, 30 January, 12\textsuperscript{15}.

The exam will take place on Friday, 02 March 2007, 10\textsuperscript{00}–12\textsuperscript{xx}. The following hints will be on the exam:

Verify whether your exam exercise sheets are complete: It should contain Exercise 1 to Exercise ??.
Insert your name and matricel (student number) on each sheet. Approaches, solutions and all side calculations must be written to the given paper. Please use also the back sides. If you need extra paper ask the supervisor. Do not remove the staple!

\textbf{Do write with blue or black ink!}
Do \textbf{NOT use a pencil or any other erasable pen.}

The exam must be handled independently. Permitted auxiliary means are: writing materials, a pocket calculator (non-programmable, without division with remainder, without linear algebra software), and a cheat sheet, DIN A4, two-sided, written only with your own handwriting. Any other utilities, even own paper, are not permitted.

An attempt at deception leads to failure for this exam and possibly other measures — even if the attempt is only detected later.

Exercise 11.1 (Legal situation in Germany). (0+6 points)

Find out more about fingerprint relevant legislation in Germany.

(i) Which fundamental rights are touched? \hspace{2cm} +2

(ii) Which information may be stored without or with knowledge or approval, respectively? \hspace{2cm} +2

(iii) Was it necessary to adapt laws to enable the storage of fingerprints in the new electronic passport? \hspace{2cm} +1

(iv) Which reasons did the parliament convince to accept? \hspace{2cm} +1

Exercise 11.2 (Evaluation of Fingerprint Verification Algorithms).

(0+4 points)

Read chapter 6 in Wayman, Jain, Maltoni & Maio (2005) about FVC2002 or consult \url{http://bias.csr.unibo.it/fvc2004/} about FVC2004. Four test sets of fingerprints were used.
(i) How large were the test sets? How have these test sets been generated?

(ii) It turned out that the first two were much ‘easier’ than the third one. Why?

(iii) Explain what the EER is.

(iv) How ‘good’ are the competing algorithms?

References

JAMES WAYMAN, ANIL JAIN, DAVIDE MALTONI & DARIO MAIO (editors) (2005). Bio-
1-85233-596-3.