

Codes and Automata

Corrections and Complements

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This file contains corrections and complements to the book.

1 Preliminaries

- p. 28 *ℓ.* -2 : Insert ‘provided the automaton is complete’ after ‘The matrix M/k is stochastic’.
- p. 37 *ℓ.* 2 of proof of Proposition 1.10.10 : remove the last ‘×’.

2 Codes

- p. 74 *ℓ.* 16 : Insert ‘ $= pqt^2 F_{D_a^*}(t)$ ’ after ‘ $F_a(t)F_{D_a^*}(t)F_b(t)$ ’
- p. 102 *ℓ.* 3 of Exercise 2.4.2 : Replace ‘prefix of u ’ by ‘prefix u of w ’

3 Prefix codes

- p. 157 *ℓ.* -7 : Replace ‘ \mathcal{B} ’ by ‘ \mathcal{B} ’ of the proof of Lemma 3.8.6’
- p. 173 Exercise 3.8.2 *ℓ.* 1 : Add ‘s’ to ‘length’
- p. 173 Exercise 3.8.2 *ℓ.* 3 : Insert ‘3.8.1 and’ before ‘3.6.4’

4 Automata

- p. 194 Example 4.3.5 : ‘the code $X =$ ’ instead of ‘the code $C =$ ’

5 Deciphering delay

- p. 214 *ℓ.* 15 : Insert ‘with $a \in A$ ’ at the beginning of the line

6 Bifix codes

- p. 233 *ℓ.* 5 : ‘for $k = 0, 1$ ’ instead of ‘for $k = 0, 1, 2$ ’

10 Synchronization

- p. 395 Section 10.6 Notes : Insert ‘The notion of *constant* appears in Schützenberger (1975). The notion of *synchronizing word* appears in many contexts with various denominations, including magic word (Lind, Marcus (1995)) or reset sequence. It has been defined in Chapter 3 for prefix codes and for deterministic automata. The notion of *synchronizing pair* is an

extension of the definition of synchronizing word to codes which are not prefix. It is due to Schützenberger (1979b).’

- p. 395 Section 10.6 Notes $\ell. 3$: Insert before ‘However’ the sentence ‘This is Theorem 10.2.11.’

11 Groups of codes

- p. 415 Remark 11.4.5, $\ell. 3$: Insert a space between ‘ X ’ and ‘is’
- p. 495 proof of Proposition 14.1.2, $\ell. 1$: Replace ‘Let X, Y ’ by ‘Let X, Z ’

Solution of exercises

- p. 544 Solution 3.8.1 $\ell. 3$ of p. 544 : Replace ‘ $v_{n+p} = v_n k^p - \sum_{i=1}^p u_{n+i} k^{p-i}$ ’ by ‘ $v_n = k^p - \sum_{i=1}^n u_{n-i} k^i$ ’, and insert $\ell. 4$, before ‘Using’ the sentence ‘It implies that $v_{n+p} = v_n k^p - \sum_{i=1}^p u_{n+i} k^{p-i}$.’
- p. 584 Solution 14.1.3: insert ‘strict’ before ‘right contexts’ and ‘left contexts’

Appendix: Research problems

- p. 593 $\ell. -4$: Replace ‘finite set Y ’ by ‘finite subset Y ’

References

- p. 596 $\ell. -10$: Replace ‘Capoceli’ by ‘Capocelli’