This file contains corrections and complements to the book. All references are to the printed version.

1 Algorithms on Words

- page 5, line 4 : replace the first sentence by ‘The radix order is defined by \( x < y \) if \(|x| < |y|\) or \(|x| = |y|\) and \( x = uax' \) and \( y = uby' \) with \( a,b \) letters and \( a < b'\).

- page 14 : Replace Figure 1.6 by the figure below.

- page 26 : replace Figure 1.16 on the right by the figure below.

- page 27 : replace Figure 1.17 on the right by the figure below.
• page 41, line -7: add at the end of the paragraph ‘For simplicity, we discard the possibility of multiple edges in the resulting automaton.’

• page 45, line -8: replace ‘where \( u \)’ by ‘where \( \lambda \)’

• page 71, lines 6, 13, 16, 20: replace ‘nonnegative matrix \( M \)’ by ‘nonnegative \( Q \times Q \)-matrix \( M \)’.

• page 71, line -16: Replace assertion 2 by : If \( M \leq N \), then \( \rho_M \leq \rho_N \). If \( M \) is moreover irreducible and \( M \neq N \), then \( \rho_M < \rho_N \).

• page 71, ligne -15: Replace assertion 3 by ‘There corresponds to \( \rho_M \) a nonnegative eigenvector and, if \( M \) is irreducible, \( \rho_M \) is the only eigenvalue with this property.’

• page 71, replace line -10 by ‘than \( \rho = \rho_M \). Moreover, \( (1/\rho^n)M^n \) converges to a matrix...’

• page 71, last sentence : replace the sentence by
‘The corresponding nonnegative eigenvector \( y \) of \( U \) or \( W \) can be completed to a nonnegative eigenvector \( x \) of \( M \). Indeed, if \( y \) is an eigenvector of \( U \) for the eigenvalue \( \rho_U \), then \( x = \begin{bmatrix} y \\ 0 \end{bmatrix} \) is an eigenvector of \( M \) for the same eigenvalue. If \( y \) is a nonnegative eigenvector of \( W \) for the eigenvalue \( \rho_W > \rho_U \), then the matrix \( T = \rho_W I - U \) is invertible with a nonnegative inverse and \( x = \begin{bmatrix} z \\ y \end{bmatrix} \) with \( z = T^{-1}V y \) is a nonnegative eigenvector of \( M \).’

• page 72, line 23 : replace \(|z|\) by \(|\lambda|\).

• page 72, line -3 : replace \( b_{i,j} \) by \( n_{i,j} \).

• page 73, line 17 : colinear.

• page 75, line 17 : \( E(X) = nq \).

• page 76, line 12 : replace ‘tends to \( \pi(a) \)’ by ‘tends to \( \pi(a) \), provided the chain is aperiodic’.

• page 76, line -1 : replace \( \pi(1, b, 2) \) by \( \pi(1, b, 3) \).
• page 77, line 1: replace $\pi(2, b, 2) = 1$ by $\pi(3, b, 3) = 1$.

• page 81, line -7: Replace the sentence ‘Since...$\sum_{a \in A} H^a \pi(a)$’ by ‘Since $\pi$ is the stationary distribution, $P(X_n = a) = \pi(a)$ for all $n \geq 1$ and thus $H(X_{n+1} | X_n) = \sum_{a \in A} H^a \pi(a)$.’

• page 83, line 13: change ‘and let $M$ be’ by ‘and let $M = (m_{ij})$ be’

• page 83, line -3, change to: ‘The entropy of the Markov chain is $\log \lambda$.
Indeed, let $D = (d_{ij})$ be the diagonal matrix with $d_{ii} = v_i$. Then $P = (1/\lambda)D^{-1}MD$ and thus $P^n = (1/\lambda^n)D^{-1}M^nD$ for all $n \geq 1$. Therefore, the probability of any path $\gamma$ of length $n$ from $i$ to $j$ is’

• page 84, replace Figure 1.52 by the following one.

• page 84, line -11: change ‘We have’ to ‘We have, with $\varphi = (1 + \sqrt{5})/2$’;

• page 85, line 1: Ergodic sources and compression

• page 99, line -11: Consider a primitive morphism $f$...

• page 100, line 8:

$$U = \begin{bmatrix}
1 & 0 & 1 & 1 & 0 & 1 & 1 & 0 & 1 & 1 & 0 & 1 \\
0 & 1 & 1 & 0 & 1 & 1 & 1 & 1 & 0 & 1 & 1 & 1 \\
1 & 1 & 0 & 1 & 1 & 0 & 0 & 0 & 1 & 1 & 0 & 1 \\
1 & 0 & 1 & 1 & 0 & 1 & 1 & 0 & 1 & 1 & 0 & 1
\end{bmatrix}$$

• page 100, line -4: replace ‘Show that $w \mapsto T(w)$ is a bijection’ by ‘Show that the map $w \mapsto T(w)$ is injective, up to conjugacy’.

• page 100, line -1: replace $\sum_{w \in S} z^{|w|}$ by $\sum_{n \geq 0} \text{Card}(S \cap A^n)z^n$. 
• page 101, line 3: replace $S(z)$ by $S(z) = \sum_{n \geq 0} \pi(S \cap A^n) z^n$.

• page 102, line 4: The algorithm giving the factorization in Lyndon words (Algorithm LYNDONFACTORIZATION) is due to Duval (1983) (see also [2, Exercise 106]). It is related with an algorithm of Fredricksen and Maiorana (1978) for the generation of Lyndon words (see [2] and [1] for further information).

References
