Corrections to Randomized Algorithms

- All occurrences of “Cauchy-Schwartz” should read “Cauchy-Schwarz”.
- Page ix of the Preface: The last sentence should read
  
  The Appendices review basic material on probability theory.

- Page 6, line 19

  see Problem 4.15

should be

  see Problem 4.14

- Page 8, Definition 1.1, first line

  neighborhood of $G$

should be

  neighborhood of $v$

- Page 22, Exercise 1.10,

  $1/2 + 1/2^n$

should be

  $1/2 - 1/2^n$

- Page 30, line 14

  With probability $1/2$ both sub-trees

should be

  With probability at most $1/2$ both sub-trees

- Page 30, fifth line from the bottom

  “... algorithm is $n^{k_2 3}$,”
should be

“... algorithm is at most $n^{\log_4 3}$,”

Similarly, the first sentence (second line) of Section 2.2

“... time of $n^{0.733}$

should be

“... time of at most $n^{0.733}$

• Page 39, fifth line from the bottom,

O(n)

should be

$n + 1$

• Page 40 line 13,

uses the the

should be

uses the

• Page 44, eighth line from the bottom, the value of $k^*$ should be given by

Let $k = \lfloor (3 \ln n) / \ln \ln n \rfloor$.

• Page 48, fifth line from the bottom

“... (or if $b$ is smaller than or equal to $S_{(k)}$),”

should be

“... (or if $b$ is smaller than $S_{(k)}$),”

• Page 50, 13th line from the top, the first = should be $\leq$.

• Page 50, last line of Exercise 3.5
in Problem 4.16.
should be
in Problem 4.15.

- Page 52, first line
  "... field of"
should be
  "... ring of"

- Page 57, third line of Section 3.6,
  "... random choice of the coupons"
should be
  "... random choices of the coupons"

- Page 61, formula above "Putting all this ..." should be

\[
\lim_{n \to \infty} \binom{n}{k} \frac{n^k}{k!} = 1.
\]

- Page 63, final displayed equation (after "Thus, we obtain that")

\[
\lim_{n \to \infty} \Pr[n(\ln n - c) \leq X \leq n(\ln n + c)] = e^{-\epsilon^c} - e^{-\epsilon^{-c}}.
\]
should be

\[
\lim_{n \to \infty} \Pr[n(\ln n - c) \leq X \leq n(\ln n + c)] = e^{-\epsilon^{-c}} - e^{-\epsilon^c}.
\]

- Page 73, line 10
(4.11)
should be (4.1)

- Page 81, third paragraph
  Chapter 9.10
  should be
  Section 9.10

- Page 125, Problem 5.8(b), the probability
  \[ \exp(-n^{3/4}/12) \]
  should be
  \[ \exp(-n^{3/4}/24). \]

- Page 130, line 13 formula for \( h_{ij} \) should be
  \[ h_{ij} = \sum_{t>0} t \tau_{ij}^{(t)} \]
  for \( f_{ij} = 1 \), and \( h_{ij} = \infty \) otherwise.

- Pages 132-133: Replace the proof of Lemma 6.3 by

  From the fact that \( \pi \) is stationary and the definition of \( P_{uv} \)
  we get the following system of equations
  \[ \pi_v = [\pi P]_v = \sum_u \pi_u P_{uv}, \text{ for all } v \]
  This system admits the solution \( \pi_u = d(u)/2m \) which, by
  Theorem 6.2, is the unique stationary distribution. \( \square \)

- Page 200, second line from the bottom
logarithmic
should be
linear

• Page 209, line -3:
sits above each
should be
is created for an

• Page 210, Figure 8.5, the contents of the lower left most box

\([-\infty, 2]\]
should be

\([-\infty, 1]\]

• Page 211, seventh line from the bottom

\[r = \max_i X_i\]
should be

\[r = 1 + \max_i X_i\]

• Page 212, fourth line from the bottom, delete

\[= O(N).\]

• Page 219, third line from the bottom

We the family
should be

We define the family

• Page 247, Theorem 9.4, third line
Delaunay triangulation
should be
Voronoi diagram

• Page 274, formula above the last line, the fourth root should be a square root.

• Page 295, ninth line from the bottom, the right hand side of the displayed equation
\[ k + H_{k-1} + 3, \]
should be
\[ k + H_{k-1} + 4, \]

• Page 341, second line from the bottom
and \( m \) edges.
should be
and \( m = \Omega(n) \) edges.

• Page 345, line 11:
Combining these two lemmas, we obtain the following.

should be

Let \( v \) be a good vertex with \( d(v) > 0 \), and consider the event \( \mathcal{E} \) that some vertex in \( \Gamma(v) \) does indeed get marked. Let \( w \) be the lowest-numbered marked vertex in \( \Gamma(v) \). By Lemma 12.4, the probability that \( w \) is selected to be in \( S \) is at least 1/2. Clearly, if \( w \in S \), then \( v \) must belong to \( S \cup \Gamma(S) \). Using the bound on the probability of the event \( \mathcal{E} \) from Lemma 12.3, we obtain the following.

• Page 390, last line of Problem 13.4(c)
can prove

should be

you can prove

• Page 401, displayed equation on line 12, replace both occurrences of $a^l$ by $r^l$.

• Page 443, Proposition C.7 part 3

For a non-negative integer-valued random variable $X$, $E[X] = \sum_{x=0}^{\infty} \Pr[X \geq x]$.

should be

For a non-negative integer-valued random variable $X$, $E[X] = \sum_{x=0}^{\infty} \Pr[X > x]$.

• Page 454, citation 155, the journal is *SIAM Journal on Algebraic and Discrete Methods*.

• Page 457, in citations 220 and 221, the word “column” is mis-spelt.

• Page 459, citation 262 should be pages 323–350.


• Page 473, in the Index,

Pólya, G.,

is incorrectly sorted and appears before

packet routing