Errata for Lecture Slides to Algorithm Design

Below are all the known errors in the lecture slides. Please email Kevin Wayne if you discover any more.

Stable Matching, slide 30

Printed: Blue nodes are complement of independent set
Corrected: Switch gray and blue colors so that blue nodes are indepedent set

Reported by Barbara Anthony, 14-Jan-14.
Fixed 14-Mar-14.

Divide-and-Conquer II, slide 56, 62

Printed: $n/2, a_1, a_3, a_4, ..., a_{n-1}$

Corrected: $n/2, a_1, a_3, a_5, ..., a_{n-1}$

Reported by Joseph Paul Cohen and Swami Iyer, 20-Jul-15.
Fixed 20-Jul-15.

Dynamic Programming I, slide 10

Printed: Compute-Opt(p[j]
Corrected: Compute-Opt(p[j])

Reported by Joseph Paul Cohen, 29-Jun-15.
Fixed 30-Jun-15.

Dynamic Programming I, slide 11

Printed: figure: leftmost non-leaf node has the value 1
Corrected: it should be 2

Reported by Joseph Paul Cohen, 29-Jun-15.
Fixed 30-Jun-15.

Dynamic Programming I, slide 27

Printed: FOR w = 1 to W
Corrected: FOR w = 0 to W

Reported by Ali Leino, 10-Feb-16.
Fixed 11-Feb-16.

Dynamic Programming I, slide 29

Printed: M[i, w] < M[i − 1, w]
Corrected: M[i, w] > M[i − 1, w]

Reported by Joseph Paul Cohen, 29-Jun-15.
Fixed 30-Jun-15.

Dynamic Programming I, slide 35

Printed: OPT(5, 10) is 34
Corrected: OPT(5, 10) is 35

Reported by Brian Le, 09-Jul-15.
Fixed 10-Jul-15.

Dynamic Programming II, slide 14

Printed: alpha_$\{x_i\,y_j\}$.

Corrected: alpha_$\{x_{i+1}\,y_{j+1}\}$.

Reported by Kewei Tu, 11-Oct-14.
Fixed 11-Oct-14.

Dynamic Programming II, slide 19

Printed: $T(m, n) = O(m \log n)$.

Corrected: $T(m, n) = O(m\,n \log n)$.

Reported by Kewei Tu, 11-Oct-14.
Fixed 11-Oct-14.

Dynamic Programming II, slide 23

Printed: In the second figure, the updated weight of edge w->t is 7.

Corrected: It should be 6.

Reported by Barbara Anthony, 14-Mar-14.
Fixed 14-Mar-14.

Intractability III, slide 5

Printed: The Indepedent-Set-In-A-Forest algorithm fails to include nodes that initially have degree 0 (or nodes whose degree becomes 0 during the algorithm) in the maximum cardinality independent set.

Corrected: The algorithm return the union of S and the set of nodes that remain upon termination of the while loop.

Reported by Kewei Tu, 24-Nov-14.
Fixed 24-Nov-14.

Approximation Algorithms, slide 24

Printed: $dist(u, v) = 2$ if $(u, v) \in E$ and $dist(u, v) = 1$ if $(u, v) \notin E$

Corrected: $dist(u, v) = 1$ if $(u, v) \in E$ and $dist(u, v) = 2$ if $(u, v) \notin E$

Reported by Seba Vigna, 08-Nov-14.
Fixed 08-Nov-14.

Approximation Algorithms, slide 60

Printed: scaling factor $\theta = \varepsilon\, v_{max} / n$

Corrected: scaling factor $\theta = \varepsilon\, v_{max} / 2n$

Reported by Seba Vigna, 08-Nov-14.
Fixed 08-Nov-14.

Approximation Algorithms, slide 61

Printed: $n\,\theta = \varepsilon\, v_{max}, v_{max} \le \Sigma_{i \in S}\, v_i$

Corrected: $n\,\theta = \varepsilon\, v_{max} / 2, v_{max} \le 2\,\Sigma_{i \in S}\, v_i$ and the second inequality requires a different proof

Reported by Seba Vigna, 08-Nov-14.
Fixed 08-Nov-14.

Randomized Algorithms, slide 1

Printed: content resolution
Corrected: contention resolution

Reported by Pierre Flener, 14-Oct-15.
Fixed 14-Oct-15.

Approximation Algorithms, slide 32

Printed: blue vertices do not cover edge between 33 and 32
Corrected: include 32 in vertex cover instead of 7 and 23

Reported by Michael Dinneen, 17-Oct-15.
Fixed 20-Oct-15.

Extending Limits of Tractability, slide 17

Printed: arcs in diagram are invisible
Corrected: make them visible

Reported by Kevin Wayne, 03-Nov-15.
Fixed 03-Nov-15.

Data Structures IV (Union Find), slide 39

Printed: link-by-size with path compression
Corrected: link-by-rank with path compression

Reported by Godmar Back, 26-Oct-16.
Fixed 27-Oct-16.