

## Errata for *The Design of Approximation Algorithms*

Date Logged	Book Page, Line	PDF Page, Line	Old text	New text	Contributor
7/3/14	6, 11	16, 5	$O(n^{\epsilon-1})$	$\Omega(n^{\epsilon-1})$	Takao Asano
7/3/14	9, 4	18, -13	$i = 1, \dots, m$	$i = 1, \dots, n$	Takao Asano
7/3/14	10, -16	20, 7	vertex $i \in V$	edge $e_i \in E$	Takao Asano
2/20/14	54, ex. 2.13, 4	61, ex. 2.13, 4	If $S \cup \{e\} - \{e'\}$ is a base	If $S \cup \{e'\} - \{e\}$ is a base	Milen Nikolov
2/26/14	54, ex. 2.13(b), 3	61, ex. 2.13(b) 2	$S - \{e\} \cup \{g(e)\}$	$X - \{e\} \cup \{g(e)\}$	Sam Park
7/3/14	54, 2.14, 4		paths $P_i$	$s_i$ - $t_i$ paths $P_i$	Ahmad Mahmoody
7/3/14	73, 22	73, 19	that that	that	Takao Asano
12/18/12	71, ex. 3.7, 5	78, ex 3.7, 5	is $O(n^{(1/k)^2})$ is reduced to $O(n^{1/k \log(1/k)})$ .	is $O(n^{k^2})$ is reduced to $O(n^{k \log k})$ .	Chengbin Zhao
12/18/12	82, 3	89, 22	$y_i \geq 0$	$1 \geq y_i \geq 0$	Chengbin Zhao
12/18/12	113, -14	118, -19	$y_i \geq 0$	$1 \geq y_i \geq 0$	Chengbin Zhao
12/18/12	121, -1	126, 14	$\sum_{k=1}^j p_j$	$\sum_{k=1}^j p_k$	Chengbin Zhao
12/18/12	123, 5	127, 9	$\sum_{t=0}^{T-1} \left(t - \frac{1}{2}\right)$	$\sum_{t=1}^T \left(t - \frac{1}{2}\right)$	Chengbin Zhao
7/3/14	126, 11	130, 6	$f(t) = a_i(e^t - 1) - e^{a_i t} - 1$	$f(t) = a_i(e^t - 1) - (e^{a_i t} - 1)$	Vladimir Braverman
7/3/14	132, 16		$\max_{(i,j) \in E: i \in V_a, j \in V_b, a \neq b} w_{ij}$	$\max \sum_{(i,j) \in E: i \in V_a, j \in V_b, a \neq b} w_{ij}$	Takao Asano
12/18/12	132, -9	–	that most a polynomial number	that at most a polynomial number	Li Ya Fan
5/1/13	135, 1	138, ex. 5.10(c), 4	edge $e$ is separated by a phase	edge $e$ is separated by a phase, given that both its endpoints were not assigned labels prior to the phase,	Anna Karlin
7/2/14	137, 3	141, 3	In this section	In this chapter	Takao Asano
12/18/12	175, -5	178, -3	$\forall A \subseteq I,$	$\forall A \subseteq I, v(A) < D,$	
12/18/12	176, 4	179, 6	$\forall A \subseteq I,$	$\forall A \subseteq I, v(A) < D,$	
12/18/12	176, 16	179, -15	$\forall A \subset I.$	$\forall A \subseteq I, v(A) < D.$	
7/2/14	181, -14	184, 8	removed from $T'$	removed from $T$	Takao Asano

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7/2/14	185, -13 & -20	187, -8 & -14	$\lambda_2 - \lambda_1 \leq \epsilon c_{\min}/ F $	$\lambda_2 - \lambda_1 \leq \epsilon c_{\min}/3 F $	Takao Asano
7/2/14	185, -14	187, -9	$c(S_\ell) \leq 3(\sum_{j \in D} v_j^\ell - \lambda_\ell k)$	$c(S_\ell) \leq 3(\sum_{j \in D} v_j^\ell - \lambda_\ell  S_\ell )$	Takao Asano
7/2/14	186, 9	188, 13	$(\lambda_2 - \lambda_1) S_1 $	$3(\lambda_2 - \lambda_1) S_1 $	Takao Asano
7/2/14	196, 10	198, 3	$z^i \geq  x_u^i - x_v^i $	$z_e^i \geq  x_u^i - x_v^i $	Raphael Louca
7/2/14	216, 12	217, -12	every vertex in the tree	every node in the tree	Takao Asano
7/2/14	216, -13	218, 10	vertices in $u$ and $v$	vertices $u$ and $v$	Takao Asano
7/2/14	224, -3	225, -3	weight of the edges	cost of the edges	Takao Asano
7/2/14	233, -8	, -18	clients $j \in F$	clients $j \in D$	Takao Asano
7/1/14	235, -14	237, 13	Lemma 9.3	Lemma 9.1	Simon Klein
7/1/14	245, -4	246, -5	subphase is	subphase are	Takao Asano
5/1/13	247, 4	248, 4	$Y \subseteq D - S$	$Y \subseteq S$	Marcin Mucha
7/1/14	247, 6	248, 5	$f_i \leftarrow 0; S \leftarrow S - Y$	$f_i \leftarrow 0; S \leftarrow S - Y; X \leftarrow X \cup \{i\}$	Takao Asano
7/1/14	247, -18	248, 14	facility will make a bid	client will make a bid	Takao Asano
10/8/13	251, -2	252, -9	facility 1, ..., $n$ is 1	facility 1, ..., $n$ is 0	Nirman Kumar
7/1/14	259, Figure 10.3	261, Figure 10.3		Square at (7,4) should be white	Takao Asano
7/1/14	268, 4	269, -13	$O(n^{\epsilon-1})$	$\Omega(n^{\epsilon-1})$	Takao Asano
7/1/14	272, -4	274, 18	$ V' $	$V'$	Takao Asano
7/1/14	273, -1	275, -23	maximum load $3k$	maximum load at most $3k$	Takao Asano
7/1/14	275, 6	276, -15	spanning tree $F$	spanning forest $F$	Takao Asano
6/27/14	287, 1	288, 23	$k > 2$	$k \geq 2$	Takao Asano
6/27/14	293, 22	294, -14	basic optimal solution	basic optimal solution $x$	Takao Asano
6/27/14	297, 1	297, -7	each edge set to $x_e$	each edge $e$ set to $x_e$	Takao Asano
6/27/14	299, 3	299, 13	appears at least	appears at most	Takao Asano
7/3/14	304, 12		has exactly $k$ edges	has at most $k$ edges	
7/3/14	304, 13		a tree plus one additional edge	a tree, or a tree plus one additional edge	
6/27/14	306, ex 11.6	307, ex 11.6	$\sum_{j \in J: (i,j) \in E} p_{ij} x_{ij} \leq T'_i$	$\sum_{j \in J': (i,j) \in E} p_{ij} x_{ij} \leq T'_i$	
6/27/14	306, ex 11.6	307, ex 11.6	$J_i = \{j \in J : x_{ij} > 0\}$	$J_i = \{j \in J' : x_{ij} > 0\}$	Takao Asano
6/27/14	318, 3	316, -1	in which $(u, v) \in S$ when	for which	Takao Asano

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12/18/12	322, -2	321, -10	finding a maximum-weight spanning tree in this auxiliary graph.	finding a maximum-weight spanning tree in this auxiliary graph such that no pair of edges in this tree have the same corresponding edge in $T$ .	Afshin Nikzad
12/18/12	323, 14	322, 4	Take the maximum-weight spanning tree on $R(C)$	Take the maximum-weight spanning tree on $R(C)$ as described above.	Afshin Nikzad
6/27/14	353, ex. 13.2(c)	352, ex 13.2(c)	on $i$	on $s_i$	Takao Asano
6/26/14	355, -1	355, -4	$S \subseteq V$	$S \subseteq V - r$	Takao Asano
6/26/14	363, 9	363, 9	$v$ not on some cycle	$v$ not on any cycle	Takao Asano
6/26/14	363, 20	362, -16	$\forall v \in S$	$\forall v \in V$	Takao Asano
6/26/14	369, 7	369, 6	convex combination	nonnegative combination	Takao Asano
6/26/14	370, -1	370, -9	$\chi_S(u, v)$	$\chi_{\delta(S)}(u, v)$	Takao Asano
6/26/14	396, 15	394, -9	$e^{-\Omega(\sigma^2 \log^{2/3} n)/\ v_i - v_j\ ^2}$	$e^{-\Omega(\sigma^2 \log^{2/3} n)/\ v_{i_k} - v_{i_1}\ ^2}$	Takao Asano
6/26/14	398, -19	396, -9	$1 \leq k \leq K - 1$	$0 \leq k \leq K - 1$	Takao Asano
6/26/14	398, -4	397, 6	length $k + 1$ paths	length at most $k + 1$ paths	Takao Asano
6/26/14	401, 5	399, 7	$\Gamma_k^+(H_k)$	$\Gamma^+(H_k)$	Takao Asano
6/26/14	401, -8	399, -7	$1 \leq k \leq K - 1$	$0 \leq k \leq K - 1$	Takao Asano
6/26/14	404, -17	402, 14	$(v_i - v_j) \cdot r \geq \rho\}$	$(v_i - v_j) \cdot r \geq \rho\}$	Takao Asano
7/3/14	407, 12	404, -11	$d_{uv}$ is the shortest path	$d_{uv}$ is the shortest path distance	Takao Asano
7/3/14	418, -8	415, -6	$T = \{e \in E : t_e\}$	$T = \{t_e : e \in E\}$	Takao Asano
7/3/14	423, -1	420, -15	$\beta_\ell = 1.46305$ and $f(1.46305) \geq 1.46305$	$\beta_\ell = 1.46317$ and $f(1.46317) \geq 1.46305$	Takao Asano
7/3/14	433, 10	428, -14	cannot distinguish	cannot in polynomial time distinguish	Takao Asano
7/3/14	433, -12	429, 3	at least $2^{-\log^{1-\epsilon}  E' }  E' $	at most $2^{-\log^{1-\epsilon}  E' }  E' $	Takao Asano
7/3/14	436, 5	431, 5	label sets $ L_1 $ and $ L_2 $	label sets $L_1$ and $L_2$	Takao Asano
7/3/14	440, 16	434, -9	create an edge $(u^*, v^*)$	create an edge $(u^*, v^*)$ of cost 0	Takao Asano
7/3/14	445, 3	439, -12	of $ E' $	of $E'$	Takao Asano
12/18/12	474, [111]	—	G. L. Lueker	G. S. Lueker	
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