

Errata - Corrige. March 2012.

Alberto Pettorossi. *Automata Theory and Formal Languages*. Third Edition., Aracne. 2011.

' $m, \pm n$ ' means 'page  $m$  and line  $\pm n$ ' from above (+) or below (-)

9, -3. or  $A = \emptyset$  *should be:* or  $B = \emptyset$

42. Algorithm 2.4.7.

*Add:* Point 0. If  $S \rightarrow \varepsilon$  occurs in  $P$ , then for each production  $A \rightarrow Sa$  in  $P$  add to  $P$  the production  $A \rightarrow a$ .

In Point 1: The unique final state *should be:* A final state

Point 2 *should be:* The initial state of the nondeterministic finite automaton  $M$  is a new state  $q_0$ . State  $q_0$  is also a final state if the production  $S \rightarrow \varepsilon$  occurs in  $P$ .

58, +8,+9. expression *should be:* expressions

82, -16. *Erase:* nonterminal symbol of the left hand side of that production.

112, +1.  $S Z_0 \rangle$  *should be:*  $S \$$

112, +6.  $\varepsilon, Z_0 \rangle$  *should be:*  $\varepsilon, \$$

134. The occurrences of  $A_0$  in Steps (3.1), (3.2), and (3.3) *should be replaced by:*  $B_1, B_2$ , and  $B_3$ , respectively, for some  $B_1, B_2, B_3 \in W$ .

135. In the first three lines of Step (3.5) *replace from:* '(3.5) update ...' *to:* '... if the new nonterminal symbol' *by:* (3.5) update the graph  $D$ . In particular, (i) if  $n = 0$  then erase the arc  $A_0 \rightarrow A_0$ , and (ii) if the new nonterminal symbol

145, +6. grammar  $G^s$ . Let it be: *should be:*

grammar  $G^s$ , without the production  $S \rightarrow \varepsilon$ , if it occurs in  $P^s$ . Let that system of language equations be:

145, +23. The resulting grammar *should be:*

The resulting grammar, together with the production  $S \rightarrow \varepsilon$ , if it occurs in  $P^s$ ,

162, +6.  $n - 1 + i$  *should be:*  $n - i + 1$

218, -6 and -5. are more powerful than *should be:* are incomparable with

219. The grammar with axiom  $P_k$  should be as follows:

$$P_k \rightarrow a_k P_k b_k \mid a_k P_{k-1} b_k \quad \dots \quad P_2 \rightarrow a_2 P_2 b_2 \mid a_2 P_1 b_2 \quad P_1 \rightarrow a_1 P_1 b_1 \mid a_1 b_1$$

219, -12 and -11. *Twice:* by empty stack *should be:* by all  $n$  stacks empty

219, -9. *After  $a_i$ 's add:*

while the counters  $k+1, \dots$ , and  $n$  are made empty on the first move and never used henceforth.

219, -4 and -3. also accept the language *should be:* accept (by all  $n$  stacks empty) the non-context-free language