Errata

Last updated May 9, 2019


This list is a work in progress. Some of the following corrections are tentative and may be revised, and additional corrections will probably be added.

Section 2.3.3. In Step 1 of RPG-landmark, replace the phrase “and the only landmark is φ itself, so return φ” with “and there are no intermediate states, so return ∅.”

Exercise 3.19. Part (a) should be

What sequence of commands will Refine-lookahead, Refine-lazy-lookahead, and Refine-concurrent-lookahead execute?

Definition 4.4. The first sentence of the definition should be

A ground instance of \((\mathcal{T}', \mathcal{C}')\) of \((\mathcal{T}, \mathcal{C})\) is consistent if \(\mathcal{T}'\) satisfies \(\mathcal{C}'\) and does not specify two different values for a state variable at the same time.

Example 4.5. The second paragraph should be

The assertions \([t_1, t_2] \text{loc}(r1) = \text{loc}1\) and \([t_2, t_3] \text{loc}(r1) : (\text{loc}1, \text{loc}2)\) are nonconflicting: they have no inconsistent instances.

Section 4.2.1, near the end of the section.

Let \((\mathcal{T}, \mathcal{C}) = (\mathcal{T}_1, \mathcal{C}_1) \cup \ldots \cup (\mathcal{T}_k, \mathcal{C}_k)\). If (i) each timeline \((\mathcal{T}_i, \mathcal{C}_i)\) is secure and (ii) no pair of timelines \((\mathcal{T}_j, \mathcal{C}_j)\) and \((\mathcal{T}_j, \mathcal{C}_j)\) have any unground variables in common, then \((\mathcal{T}, \mathcal{C})\) is secure. The book omits part (ii).

Exercise 4.8. The reference to Exercise 4.4 should instead be a reference to Exercise 4.3.

Section 5.2.3. The definition of a reachability graph should be this:

\[
\text{Graph}(s, \pi) = (\hat{\gamma}(s, \pi), \{(s', s'') \mid s' \in \hat{\gamma}(s, \pi) \text{ and } s'' \in \gamma(s', \pi(s'))\})
\]
or perhaps more clearly,

\[ \text{Graph}(s, \pi) = (V, E), \]

where

\[ V = \hat{\gamma}(s, \pi), \]
\[ E = \{ (s', s'') \mid s' \in \hat{\gamma}(s, \pi) \text{ and } s'' \in \gamma(s', \pi(s')) \} \]

Section 5.2.3. The last line before Example 5.5 should be

We let \( \hat{\Gamma}(s) \) be the set of all states that are reachable from \( s \), i.e., \( \Gamma(s) = \bigcup_{\pi} \hat{\gamma}(s, \pi) \).

Exercise 5.7(b). Remove the words “by drawing the And/Or search tree.”

Section 6.2.1. Where definition 6.3 says leaves\((s_0, \pi) \cap S_g \neq \emptyset\), it should instead say \( \hat{\gamma}(s_0, \pi) \cap S_g \neq \emptyset \).

Section 6.2.3. The paragraph after Equation 6.3 should be

A closed policy \( \pi' \) dominates a close policy \( \pi \) if and only if \( V^{\pi'}(s) \leq V^\pi(s) \) at every state \( s \) where both \( \pi \) and \( \pi' \) are defined. A closed policy \( \pi^* \) is optimal if it dominates all other closed policies. At every state \( s \) where \( \pi^* \) is defined, it has a minimal expected cost: \( V^*(s) = \min_{\pi} V^\pi(s) \). Under our assumption of probabilistic planning in a domain without dead ends, \( \pi^* \) is guaranteed to exist.

Algorithm 6.8. \( V, \pi, \) and \( \text{Envelope} \) should be global variables. Also, the following line should be added at the beginning of the algorithm:

\[ V_0(s_0) \leftarrow V(s_0) \]

Section 6.4.2 RFF, Algorithm 6.16, should be as follows:

\[
\begin{align*}
\text{RFF}(\Sigma, s_0, S_g, \theta) & \\
\pi & \leftarrow \text{Det-Plan}(\Sigma_d, s_0, S_g) \\
\text{if } \pi & = \text{failure} \text{ then return failure} \\
\text{while } \exists s \in \hat{\gamma}(s_0, \pi) \setminus (\text{Dom}(\pi) \cup S_g) \text{ such that } \Pr(s|s_0, \pi) \geq \theta, \text{ do} \\
\pi' & \leftarrow \text{Det-Plan}(\Sigma_d, s, S_g \cup \text{Targets}(\pi, s)) \\
\text{if } \pi & = \text{failure} \text{ then return failure} \\
\pi & \leftarrow \pi \cup \{(s, a) \in \pi' \mid s \notin \text{Dom}(\pi)\}
\end{align*}
\]

Algorithm 1: A determinization planning algorithm.