

# Errata

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The following is a list of corrections for *Stochastic Networked Control Systems: Stabilization and Optimization under Information Constraints*. For more typos, please contact yuksel@mast.queensu.ca or basar1@illinois.edu.

**Page 93** In the first paragraph, some of the calculated costs are negative since the expression  $kE[x^2]$  have not been included in the cost. Further numerical results, including the ones reported, are available in [40].

**Page 181-182** In Theorems 6.2.3 and 6.2.4, it should be added that  $V$  is bounded on  $C$ .

**Page 202-203** In (7.15), the equation at the bottom of 202 and top of 203, the expressions should multiply  $\alpha$  (note that  $\alpha < 1$  is the scaling term) and not divide so that the condition for stability is  $2^{R'} > |a|/\alpha$ .

**Page 217** In the equation above the Figure,  $I_0^c = \emptyset$  should be replaced with  $I_{-1}^c = \emptyset$ .

**Page 228**  $P_{g|g}^e$  in the second bullet should be  $P_{Z|g}^e$ .

**Pages 247-249** In the proof of Proposition 8.7.2: (i)  $R_T$  in the last paragraph should be replaced with  $TR_T$ . (ii)  $P(\mathcal{Y} = 1)$  should be replaced with  $P(\mathcal{Y} = 1|\mathcal{S}_T)$ . (iii) On page 249, the following intermediate step could be added before the last step to complete the proof: Since

$$P(|x(T)| \leq b(T)) \leq (1 - P(\mathcal{S}_T)) + P(\mathcal{S}_T)P_{\mathcal{S}_T}(|x(t)| \leq b(T)),$$

it follows that

$$\limsup_{T \rightarrow \infty} P(|x(T)| \leq b(T)) \leq \limsup_{T \rightarrow \infty} (1 - P(\mathcal{S}_T)) + \limsup_{T \rightarrow \infty} P(\mathcal{S}_T)P_{\mathcal{S}_T}(|x(t)| \leq b(T))$$

Now, make  $P(\mathcal{S}_T)$  arbitrarily close to 1, by making  $K$  sufficiently large and by making the noise summation at the top of page 247 (that is make  $L$  in  $|\sum_{k=0}^{T-1} A^{-k-1}Gw_k - \zeta_k| \leq L$  also sufficiently large). This leads to the last displayed equation on page 249.

**Page 249**  $\frac{1}{T}$  is missing on the left hand side of (8.32).

**Page 276** A right bracket is missing in the first equation. In the second equation, a limit expression  $\lim_{\Delta_0 \rightarrow \infty}$  is missing.

**Page 323** Let the information at the receiver at time  $t$  be  $I_r^t = \{q_{[0,t-1]}^1, q_{[0,t-1]}^2\}$  should be  $I_r^t = \{q_{[0,t]}^1, q_{[0,t]}^2\}$

**Page 346** At the end of the first paragraph, the paragraph should end with: encoder at time  $t = 0$  uses  $x_0$  (the expression after the comma may be confusing).

**Page 473** In reference [218], the second author, Jason S. Speyer is missing.