Errata

October 1, 2014

The following is a list of corrections for Stochastic Networked Control Systems: Stabilization and Optimization under Information Constraints. For more typos, please contact yuksel@ast.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 $2R > |a|/\alpha$.

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

Page 228 $P^e_{g|g'}$ in the second bullet should be $P^e_{z|y'}$.

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) $P(Y = 1)$ should be replaced with $P(Y = 1|S_T)$. (iii) On page 249, the following intermediate step could be added before the last step to complete the proof: Since

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

it follows that

$$\limsup_{T \to \infty} P(|x(T)| \leq b(T)) \leq \limsup_{T \to \infty} (1 - P(S_T)) + \limsup_{T \to \infty} P(S_T)P_{S_T}(|x(t)| \leq b(T))$$

Now, make $P(S_T)$ 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 $\lim_{\Delta_0 \to \infty}$ is missing.

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

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.