Typos to "Computing Polynomial Functions of Correlated Sources: Inner Bounds"

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I. Typos in the paper [1]

1) [1, Lemma IV.1] was stated incorrectly. The corrected statement reads:

Lemma I.1. *Let* $[X_1, X_2, \cdots, X_l, Y] \sim q$*. For any* $\epsilon > 0$ *and positive integer* n*, choose a sequence* $\tilde{X}_j^n$ $(1 \leq j \leq l)$ *randomly from* $\mathcal{T}_\epsilon(n, X_j)$ *based on a uniform distribution. If* $\mathbf{y} \in \mathscr{Y}^n$ *is an* ϵ*-typical sequence with respect to* Y*, then*

$$\begin{aligned}&\Pr\left\{(\tilde{X}_1^n, \tilde{X}_2^n, \cdots, \tilde{X}_l^n, Y^n) \in \mathcal{T}_\epsilon | Y^n = \mathbf{y}\right\}\\ \leq & 2^{-n\left[\sum_{j=1}^{l} I(X_j;Y,X_1,X_2,\cdots,X_{j-1}) - 3l\epsilon\right]}.\end{aligned}$$

Proof: Let F_j be the event $\{(\tilde{X}_1^n, \tilde{X}_2^n, \cdots, \tilde{X}_j^n, Y^n) \in \mathcal{T}_\epsilon\}$, $1 \leq j \leq l$, and $F_0 = \emptyset$. We have

$$\begin{aligned}&\Pr\left\{(\tilde{X}_1^n, \tilde{X}_2^n, \cdots, \tilde{X}_l^n, Y^n) \in \mathcal{T}_\epsilon | Y^n = \mathbf{y}\right\}\\ =&\prod_{j=1}^{l} \Pr\left\{F_j | Y^n = \mathbf{y}, F_{j-1}\right\}\\ \leq&\prod_{j=1}^{l} 2^{-n[I(X_j;Y,X_1,X_2,\cdots,X_{j-1})-3\epsilon]}\\ =&2^{-n\left[\sum_{j=1}^{l} I(X_j;Y,X_1,X_2,\cdots,X_{j-1}) - 3l\epsilon\right]},\end{aligned}$$

since $\tilde{X}_1^n, \tilde{X}_2^n, \cdots, \tilde{X}_l^n, \mathbf{y}$ are generated independent. ■

2) There is an index typo in [1, Lemma IV.2]. The corrected statement reads:

Lemma I.2. *If* $(Y_1, V_1, Y_2, V_2, \cdots, Y_s, V_s) \sim q$*, and*

$$q(y_1, v_1, y_2, v_2, \cdots, y_s, v_s) = q(y_1, y_2, \cdots, y_s) \prod_{i=1}^{s} q(v_i | y_i),$$

then, $\forall\ J = \{j_1, j_2, \cdots, j_{|J|}\} \subseteq \{1, 2, \cdots, s\}$,

$$I(Y_J; V_J | V_{J^c}) = \sum_{i=1}^{|J|} I(Y_{j_i}; V_{j_i}) - I(V_{j_i}; V_{J^c}, V_{j_1}, \cdots, V_{j_{i-1}}).$$

References

[1] S. Huang and M. Skoglund, "Computing polynomial functions of correlated sources: Inner bounds," in *International Symposium on Information Theory and its Applications*, Oct. 2012, pp. 160–164.

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This work was funded in part by the Swedish Research Council.