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COMMENTS AND CORRECTIONS

Corrections to "Unsupervised Anomaly Detection of Industrial Robots Using Sliding-Window Convolutional Variational Autoencoder"

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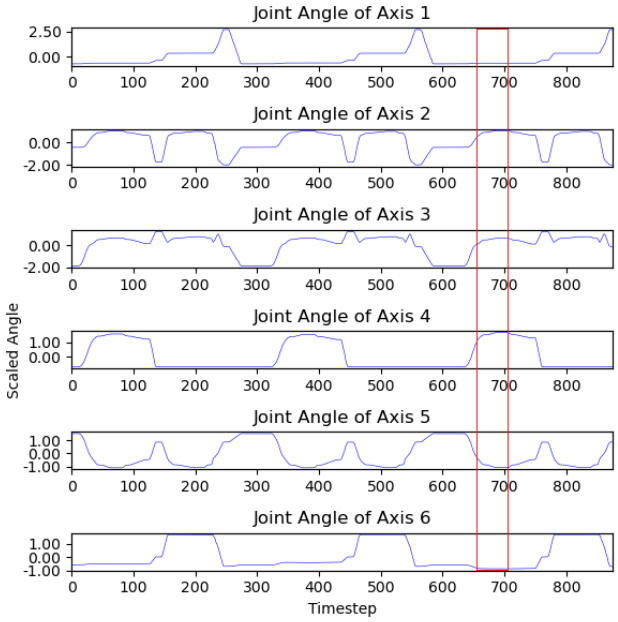

FIGURE 1. Joint angles of the Industrial robot under operation.

In the above article [1], unfortunately, errors were created when we plotted the graphs in Figure 7. The corrected graph is shown in the Figure 1 and had no influence on the discussion and conclusions in the article.

In addition, a sentence contained an error in Row 17 of Page 47074. It currently reads as "density-based methods like K-Nearest Neighbors (KNN) [21] and distance-based methods [20] may work well yet face the constraints of time and computational load when handling high dimensional data." The correct sentence is "Euclidean distance-based methods like K-Nearest Neighbors (KNN) [21] and Mahalanobis distance-based methods [20]."

There was an error in the first sentence of the last paragraph in the above article [1], which currently reads as "Although CNN is mostly applied for analyzing images, it is also successfully explored in multivariate time series data [22]." Unfortunately, it is incorrectly quoted. The correct reference should be [2].

In Row 17 of Page 47075, the sentence is "The approximation posterior distribution $q_\phi(\mathbf{z}|\mathbf{x})$ and the decoding distribution $p_\theta(\mathbf{x}|\mathbf{z})$ are designed to be multivariate Normal with diagonal co-variance matrix $\boldsymbol{N}(\boldsymbol{\mu}_\mathbf{z}, \boldsymbol{\sigma}_\mathbf{z}^2\mathbf{I})$." The correct sentence is "The approximation posterior distribution $q_\phi(\mathbf{z}|\mathbf{x})$ and the decoding distribution $p_\theta(\mathbf{x}|\mathbf{z})$ are designed to be multivariate Normal with diagonal co-variance matrix $\boldsymbol{N}(\boldsymbol{\mu}_\mathbf{z}, \boldsymbol{\sigma}_\mathbf{z}^2\mathbf{I})$ and $\boldsymbol{N}(\boldsymbol{\mu}_\mathbf{x}, \boldsymbol{\sigma}_\mathbf{x}^2\mathbf{I})$."

REFERENCES

[1] T. Chen, X. Liu, B. Xia, W. Wang, and Y. Lai, "Unsupervised anomaly detection of industrial robots using sliding-window convolutional variational autoencoder," *IEEE Access*, vol. 8, pp. 47072–47081, 2020.
[2] F. Ordóñez and D. Roggen, "Deep convolutional and LSTM recurrent neural networks for multimodal wearable activity recognition," *Sensors*, vol. 16, no. 1, p. 115, Jan. 2016.