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Livestock Activity Monitoring Using Movement Rate Based on Subtract Image

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Abstract : The 4th Industrial Revolution, the next-generation industrial revolution, which is made up of convergence of information and communication technology (ICT), is no exception to the livestock industry, and various studies are being conducted to apply the livestock smart farm. In order to monitor livestock using sensors, it is necessary to drill holes in the organs such as the nose, ears, and even the stomach of the livestock to wear or insert the sensor into the livestock. This increases the stress of livestock, which in turn lowers the quality of livestock products or raises the issue of animal ethics, which has become a major issue in recent years. In this paper, we conducted a study to monitor livestock activity based on vision technology, effectively monitoring livestock activity without increasing animal stress and violating animal ethics. The movement rate was calculated based on the difference images between the frames, and the livestock activity was evaluated. As a result, the average F1-score was 96.67.

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