Metabolic Predictive Model for PMV Control Based on Deep Learning

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Abstract : In this study, a predictive model for estimating the metabolism (MET) of human body was developed for the optimal control of indoor thermal environment. Human body images for indoor activities and human body joint coordinated values were collected as data sets, which are used in predictive model. A deep learning algorithm was used in an initial model, and its number of hidden layers and hidden neurons were optimized. Lastly, the model prediction performance was analyzed after the model being trained through collected data. In conclusion, the possibility of MET prediction was confirmed, and the direction of the future study was proposed as developing various data and the predictive model.