Advanced Cell Recognition and Clustering Based on Deep Learning

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Observing and analyzing a microbial population change is very important in many biological and medical experiments. Mostly, people count the number of microbes with their own eyes by observing them under a microscope. Since it is a time-consuming and very tough step, we developed a ‘Deep Clustering Library (DCL)’ based on deep learning to do this step automatically. And we confirmed that it is the outstanding method, compared to other methods which were established before. Based on the library, the computer could recognize the microbes automatically with high accuracy. It can also count the number of microbes with high speed and can distinguish the round and rod-shaped microbes. We also made it enabled to distinguish the color of microbes after gram staining and to cluster two, three or more microbes gathered together. Later, we will develop it more to make it possible to count other types of cells such as a tumor, animal cells, plant cells, etc.

Awards Won: