EVENT-DRIVEN VISUAL-TACTILE SENSING AND LEARNING FOR ROBOTS

ABSTRACT

A classifying sensing system, a classifying method performed using a sensing system, a tactile sensor, and a method of fabricating a tactile sensor. The classifying sensing system comprises a first spiking neural network, SNN, encoder configured for encoding an event-based output of a vision sensor into individual vision modality spiking representations with a first output size; a second SNN encoder configured for encoding an event-based output of a tactile sensor into individual tactile modality spiking representations with a second output size; a combination layer configured for merging the vision modality spiking representations and the tactile modality spiking representations; and a task SNN configured to receive the merged vision modality spiking representations and tactile modality spiking representations and output vision-tactile modality spiking representations with a third output size for classification.

Figure 14