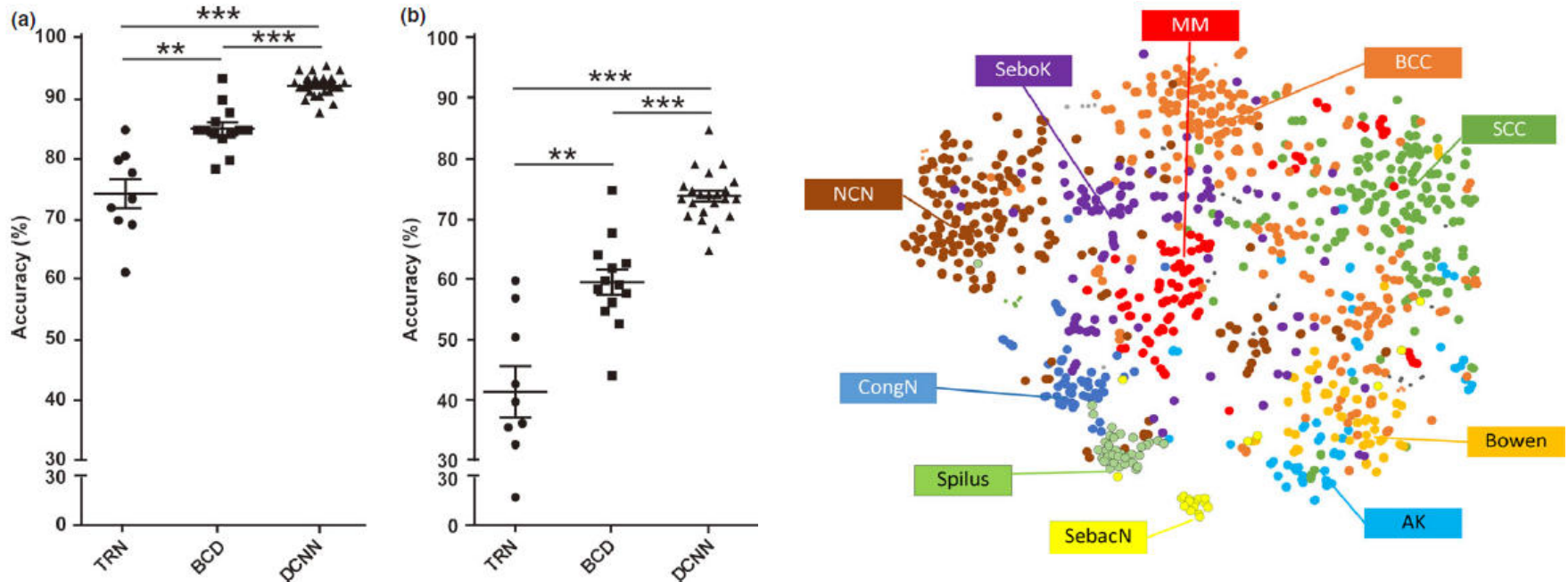


Deep-learning-based, computer-aided classifier developed with a small dataset of clinical images surpasses board-certified dermatologists in skin tumour diagnosis



METHODS: A deep convolutional neural network (DCNN) was trained using a dataset of 4867 clinical images obtained from 1842 patients diagnosed with skin tumours at the University of Tsukuba Hospital.

RESULTS: The DCNN achieved 96.3% sensitivity (correctly classified malignant as malignant) and 89.5% specificity (correctly classified benign as benign). Although the accuracy of malignant or benign classification by the board-certified dermatologists (BCD) was statistically higher than that of the dermatology trainees (TRN, 85.3% +/- 3.7% and 74.4% +/- 6.8%, $P < 0.01$), the DCNN achieved even greater accuracy, as high as 92.4% +/- 2.1% ($P < 0.001$).

References: Fujisawa Y et al., Br J Dermatol. 2019; 180(2), 373-381

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