Fig. S1. A combined certainty score for the dermatologists was defined by taking the mean of the six dermatologists' certainty scores (ranging from 0 to 1). This combined score yielded a higher area under the receiver operating characteristics curve (AUC) than merely using the mean of the dermatologists' dichotomous assessment, where 0=*in situ* and 1=invasive melanoma. ROC: receiver operating characteristic. ΔAUC, difference in AUC.
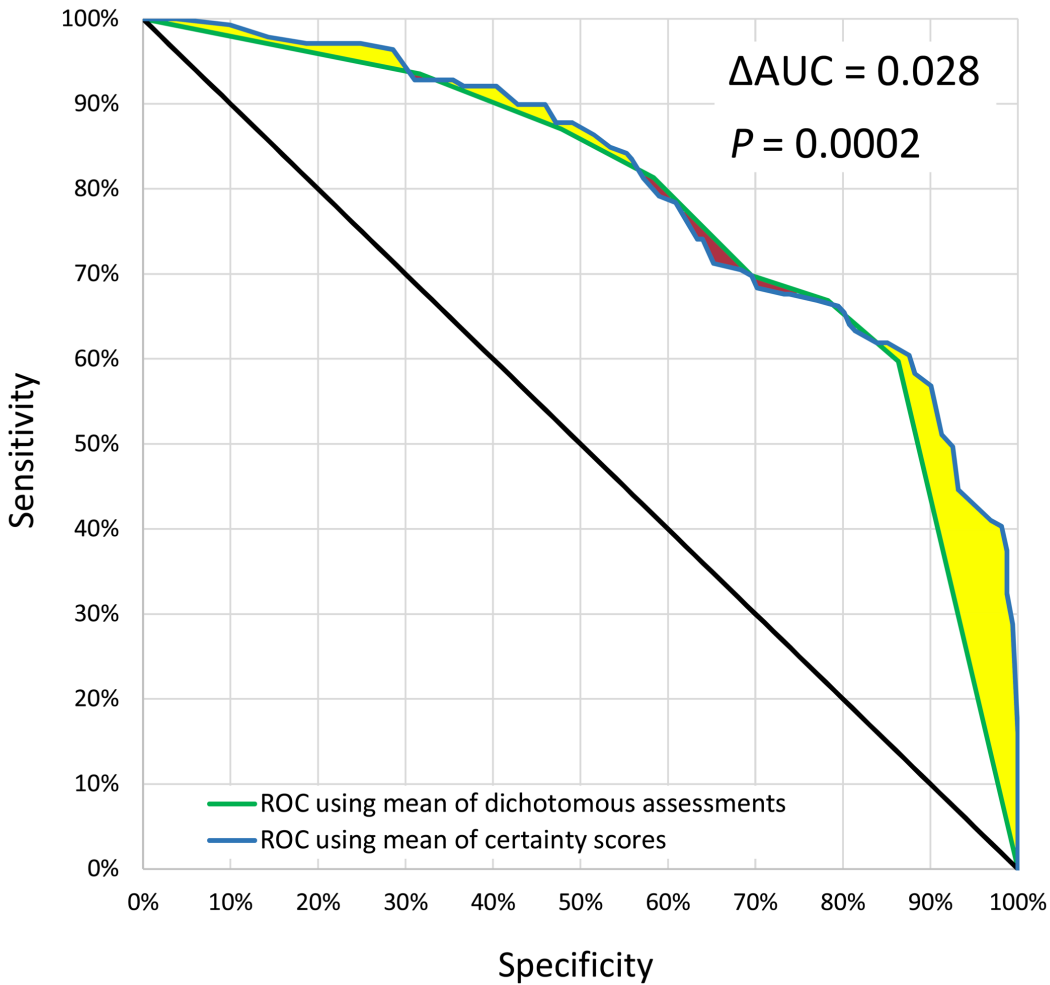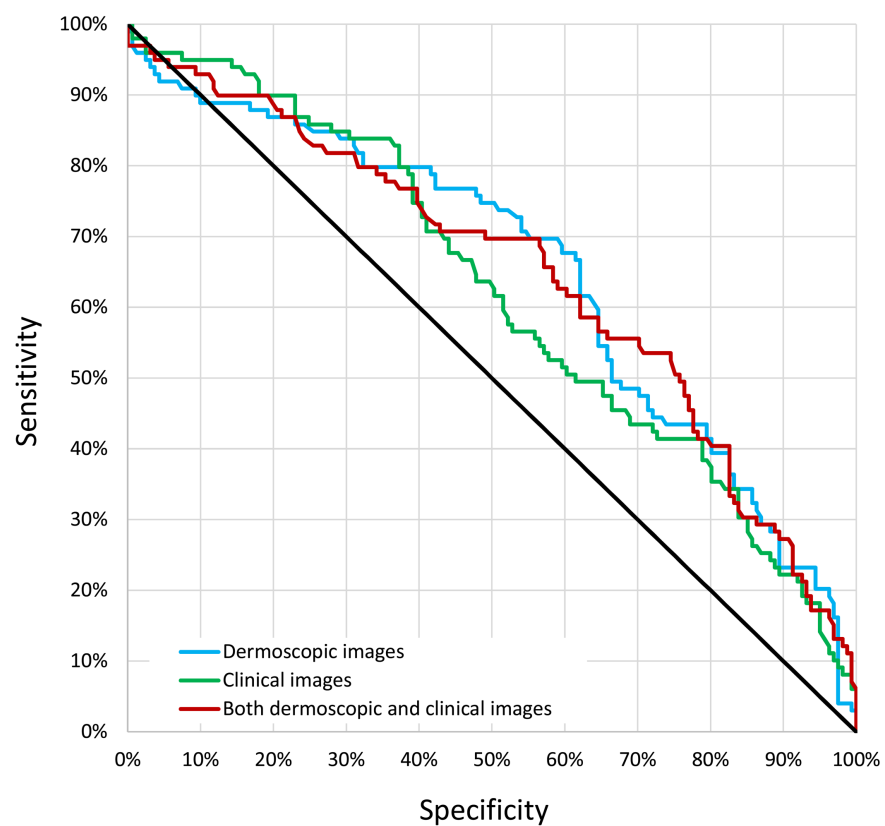
Fig. S2. Merged CNN vs CNN based only on dermoscopic images and CNN based only on clinical close-up images

A) Three CNN models evaluated on thin invasive (i.e., Breslow thickness ≤1.0 mm) (n=99) versus *in situ* melanomas (n=161).

B) Three CNN models evaluated on thick invasive (i.e., Breslow thickness >1.0 mm) (n=40) versus *in situ* melanomas (n=161).

CNN, convolutional neural network.

(A) (B)