[CVPR2023] Towards Trustable Skin Cancer Diagnosis via Rewriting Model's Decision

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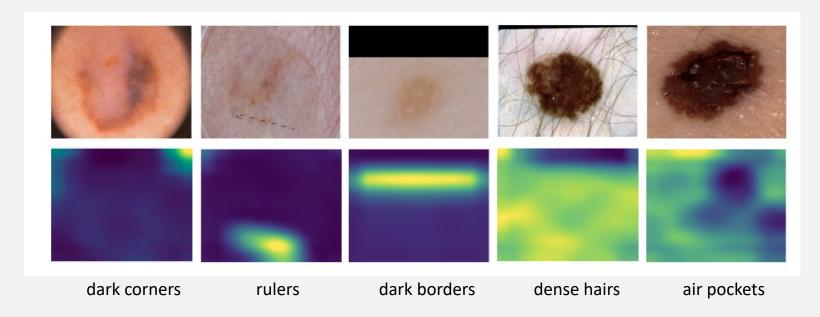Monash University, The University of Queensland, Inception Institute of AI

Motivation: The problem of skin datasets

Confounding behaviors: Models use irrelevant features like artifacts or bias within the dataset as the cue to perform its decision.
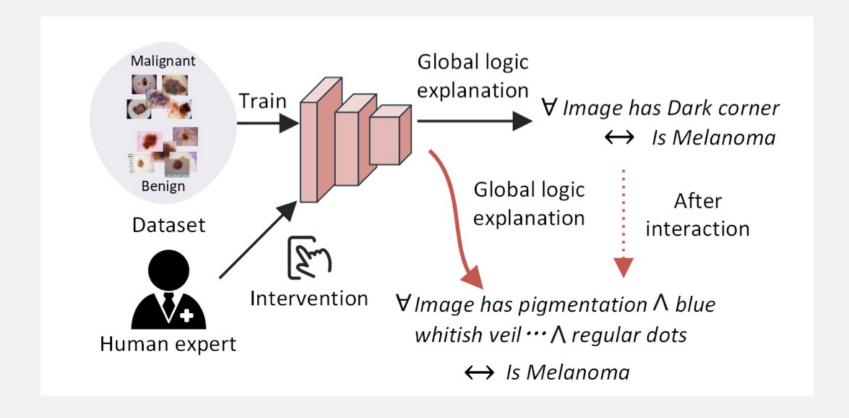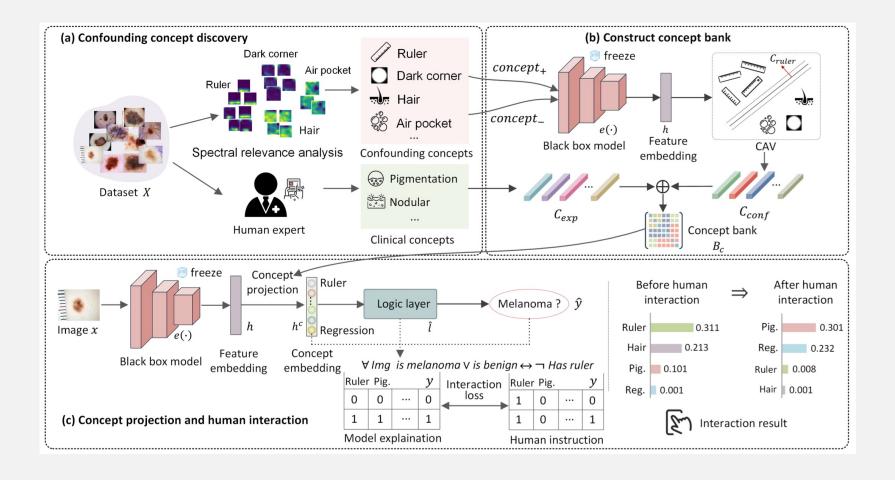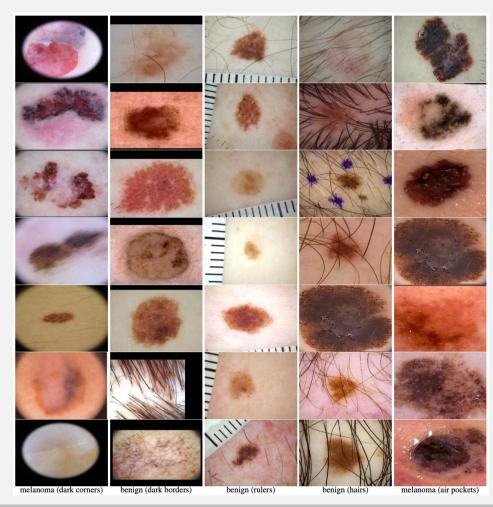
Correlation Shift - Artifacts

| dark corners | rulers | dark borders | dense hairs | air pockets |

The idea of human interaction

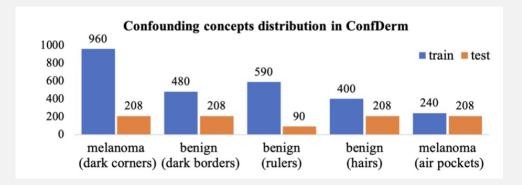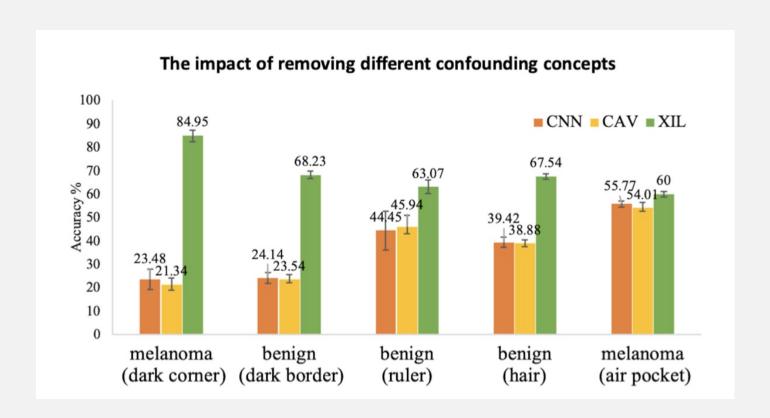# The pipeline of our explanatory interactive learning framework

ConfDerm Dataset

melanoma (dark corners) benign (dark borders) benign (rulers) benign (hairs) melanoma (air pockets)

Confounding concepts distribution in ConfDerm

- train
- test

	melanoma (dark corners)	benign (dark borders)	benign (rulers)	benign (hairs)	melanoma (air pockets)
train	960	480	590	400	240
test	208	208	90	208	208

Debiasing on highly biased datasets

The impact of removing different confounding concepts

Global explanation of our model

Thanks for your listening.