

Skin Cancer Detection Using Deep Learning

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FLATIRON SCHOOL MODULE 4
PROJECT

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1 in 5 Americans will develop skin cancer by the age of 70.



More than 2 people die of skin cancer in the U.S. every hour.



Skin cancer is the most common type of cancer

Skin Cancer in the United States

Skin Cancer Detection



Use the ABCDE Rule:



- Look for asymmetry



- Look for the border



- Look at the color

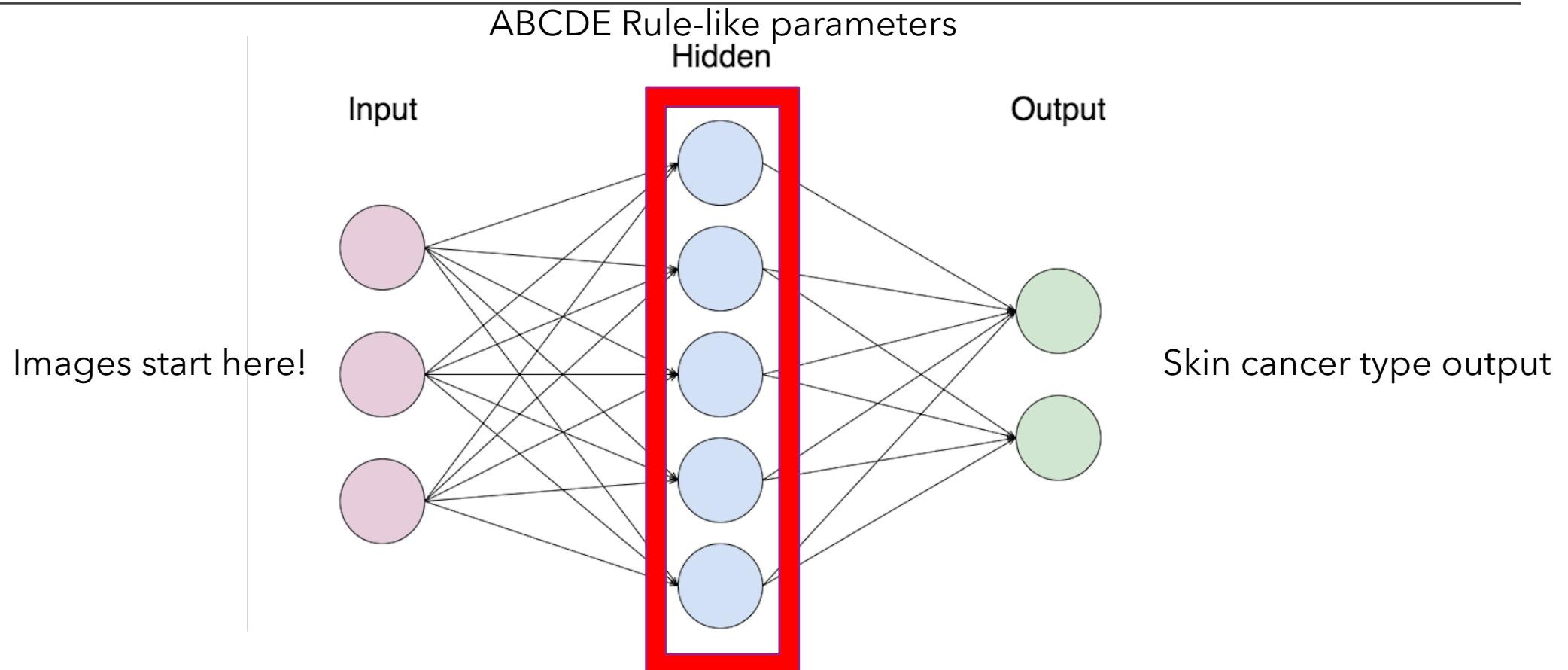


- Check out the diameter

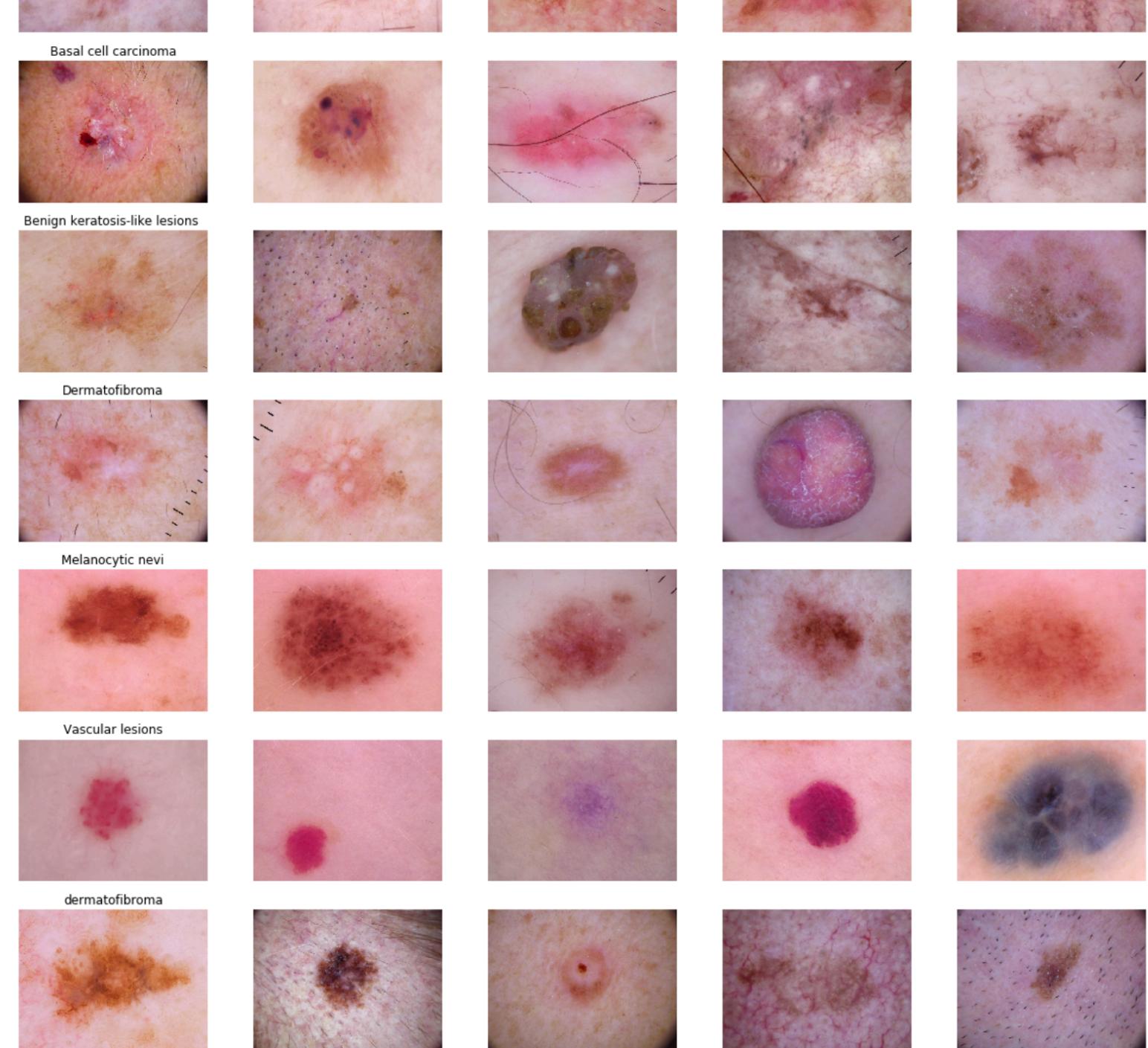


- Is the growth evolving?

Using AI for the ABCDE Rule



The Dataset: HAMM1000

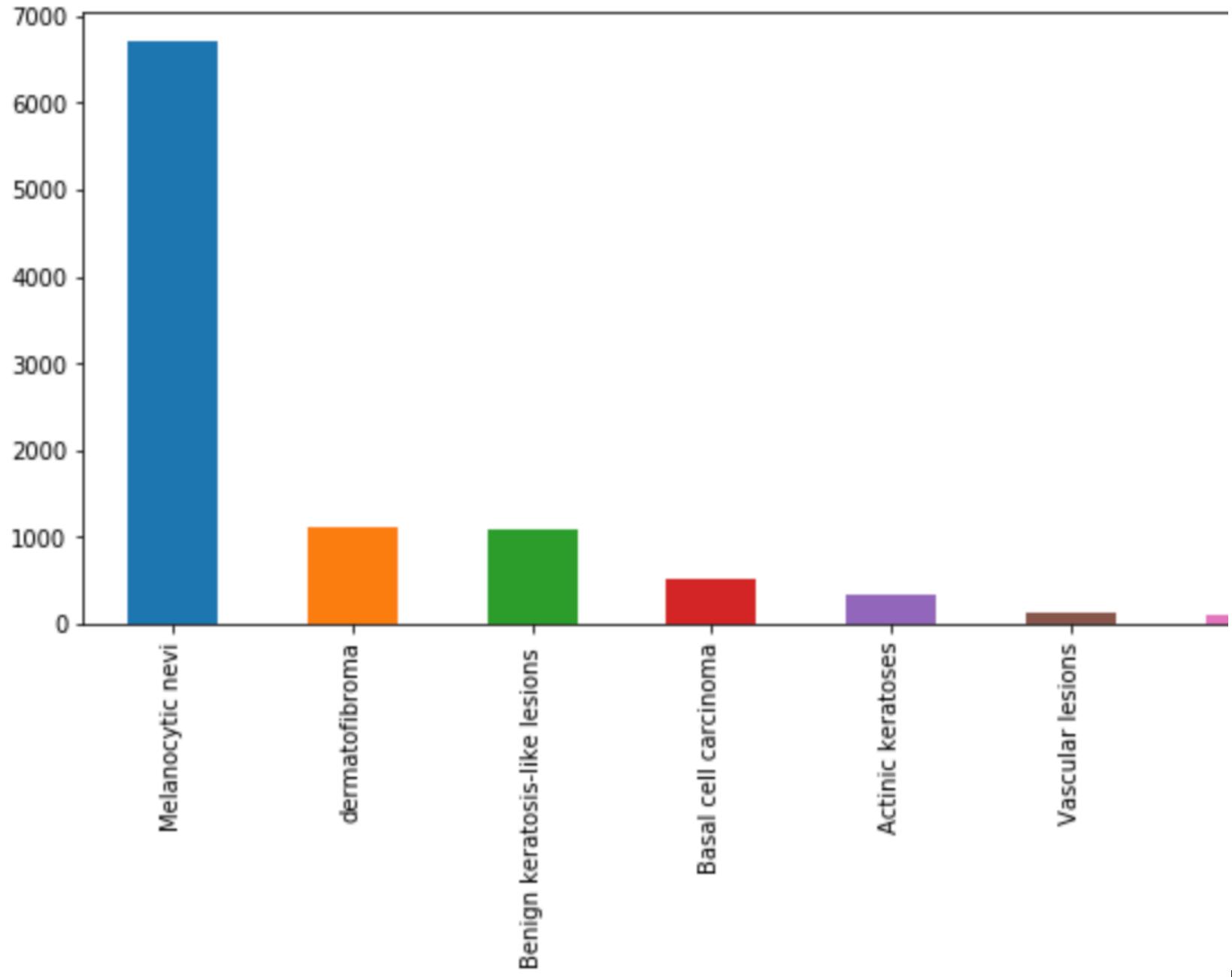


HAMM1000

Dataset:

Some facts

- 10K+ images
- 7 different skin cancer types from benign to malignant
- A variety of skin lesions representative of the population



Model Accuracy

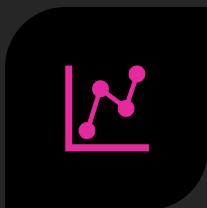
First pass accuracy after 50 testing cycles yielded 91% accuracy!



Model Performance

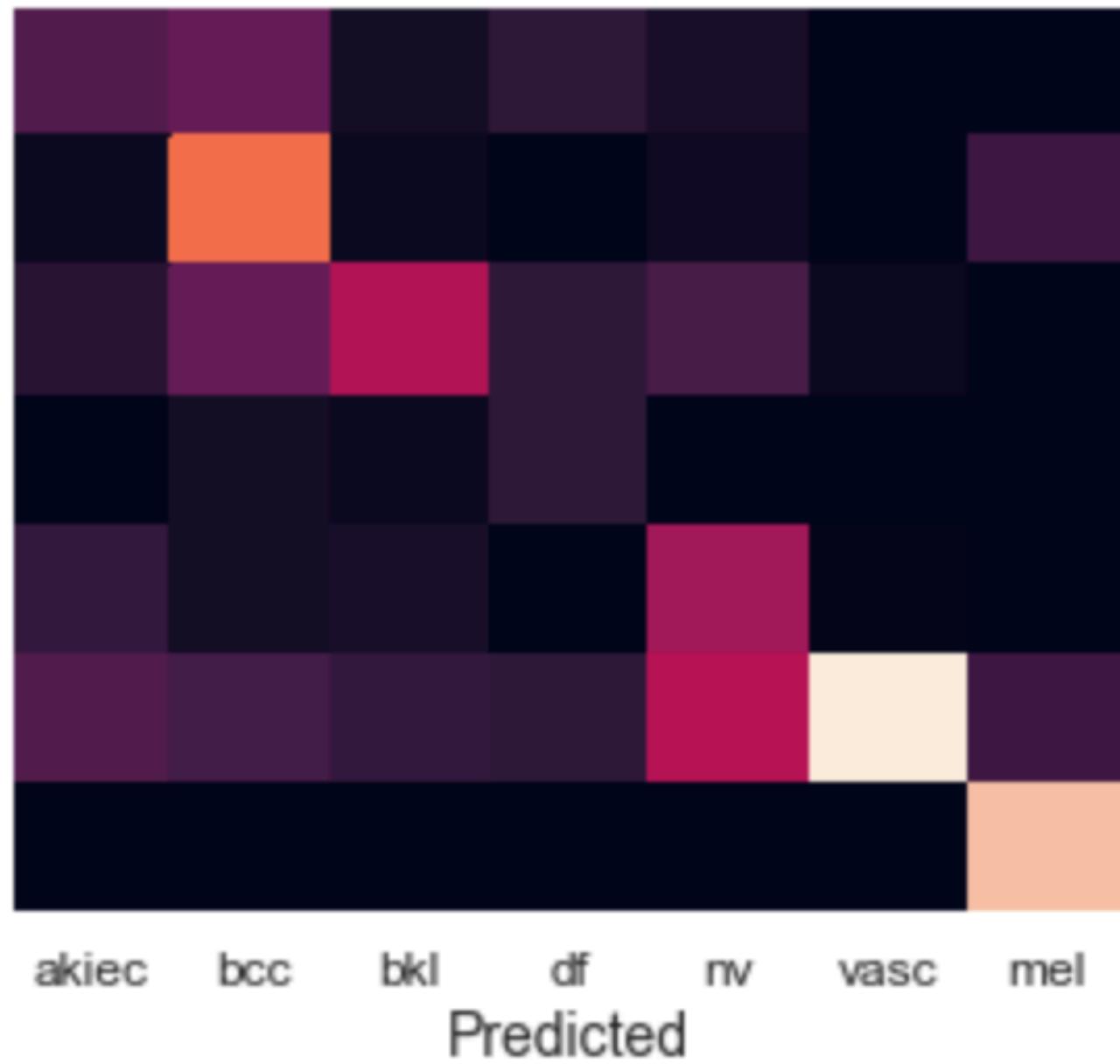


- PRECISION:
0.8393080781723388
(LOW TRUE-POSITIVE
FINDING)



- RECALL:
0.8449682683590208
(HIGHER THAN
AVERAGE FALSE
POSITIVE RATE)

Confusion Matrix



Future Work



- GET A MORE BALANCED
DATASET



- FOCUS ON 1 OR 2 DIFFERENT
TYPES OF MELANOMAS AND
CLASSIFY THERE FIRST



- USE TRANSFER LEARNING
(PREVIOUS MODELS TO PREDICT
FUTURE IMAGES)



Thank you!
