

# Developing a Research Question

1. Our topic of interest is development of a fair deep learning system to early detection of skin cancer.
2. Use one technique to explore your topic: free writing, 5Ws, or mind mapping

## **- Who does your topic impact? Who cares about your topic?**

Our topic impact patients, dermatologists and clinicians. It's crucial for patient because it can save there live. Dermatologists and Clinicians also cares about this topic because it is powerful tool to increase diagnostic accuracy and do not need subjective diagnosis.

## **- What is influenced by or influences your topic?**

Quality of data, patient metadata and model architecture influences on performance of model, and then the performance of the model influence on diagnostic accuracy, clinical value. An all of it influence the topic.

## **- When was or is your topic relevant?**

Our topic is highly relevant now. We chose article that is between 2016-2025 so in the last 10 years Deep Learning models has been significantly improved.

## **- Where is your topic relevant?**

It is relevant globally, because skin cancer is one of the most common cancer in the world. It can help doctors to decide in detection of elusive cancer cells that are difficult to tell whether they are cancerous or not.

## **- Why is your topic important?**

Because in research articles where compares dermatologists and DL model it showed that DL model have more accuracy in detecting skin cancer. But there are nuances, such as fairness and data diversity.

3. Your preliminary research question:

How can a fair multimodal diagnostic system (FMDS) be developed that takes into account structured clinical data and different skin types to improve the accuracy and objectivity of early skin cancer detection?