

ScreenVision AI



Presented by

Falah Sheikh

Hunter Halverson

Ben Shi

Ibrahim Ahmed

Meet The Team



Falah Sheikh
BSc. Computer Science

Implementation &
ML model development



Hunter Halverson
BSc. Computer Science

ML model development



Ben Shi
BSc. Neuroscience,
MD Student

Research



Ibrahim Ahmed
BSc. Computer Science

Research

Physicians can miss rare details

- Doctors often having to juggle multiple differentials, overlapping symptoms, patient volume
- Rare diseases can often be missed or misdiagnosed by doctors (1)



(1) Vandeborne, L., van Overbeeke, E., Dooms, M. et al. Information needs of physicians regarding the diagnosis of rare diseases: a questionnaire-based study in Belgium. Orphanet J Rare Dis 14, 99 (2019). <https://doi.org/10.1186/s13023-019-1075-8>

We help screen for rare symptoms

- We help screen for rare diseases through detecting signs of rare diseases
- Notifying doctors



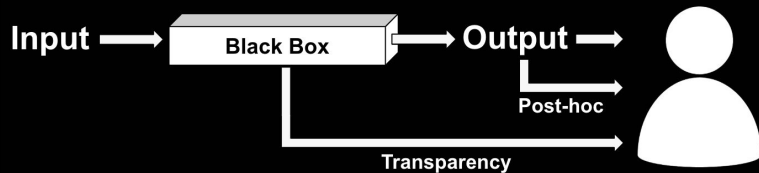
What Is ScreenVision AI?

- ScreenVision AI shows how AI can catch rare conditions and assist physicians through:
- Diagnostic accuracy
 - Interpretability
 - Explainability
 - Clinical context
 - Clear urgency prioritization
 - Automated reporting

Level	Description	Clinical Action
Routine	No immediate concern	Regular follow-up
Monitor	Worth monitoring	Schedule follow-up
Needs Attention	Requires clinical attention	Schedule appointment soon
Urgent	Urgent care needed	Prompt medical evaluation
Very Urgent	Very urgent	Immediate consultation
Emergency	Medical emergency	Seek emergency care

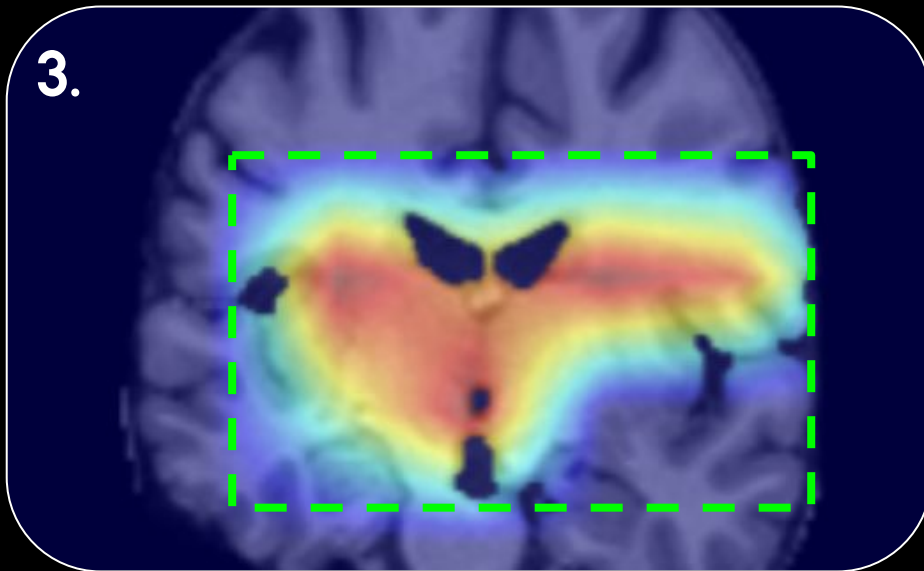
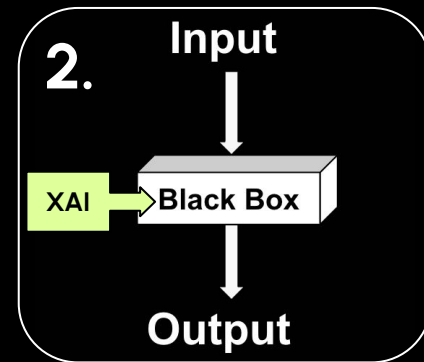
A technique to make models transparent

Explainable AI (XAI)



- Models are **black boxes** (not transparent)
- **In healthcare, models that are not transparent, are not trusted**

Solution: **Explainable AI** techniques generate an overlay showing what the model looked at in the input to decide a classification

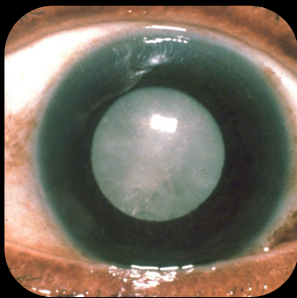


AI Explanation

- On top of a visual explanation, **ScreenVision AI** is also capable of generating a formal medical breakdown of the classification, including next steps and an urgency classification

Models

- **Cataracts:** A cloudy area in the eye caused by grouped proteins which develops over time.
- **Skin Cancer:** An abnormal growth of skin cells on an individual caused by UV rays
- **Early Alzheimer's:** A disorder in the brain that slowly deteriorates one's cognitive skills, causing difficulty in performing tasks. This also slowly progresses with time.
- **Pneumonia:** An infection in the lungs that inflames the air sacs, causing them to be filled with fluid/pus, causing breathing problems, coughing, etc.



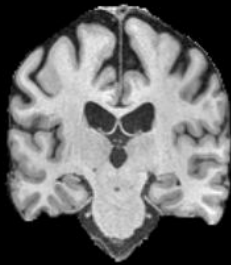
**Cataracts
Model**

2 Classes



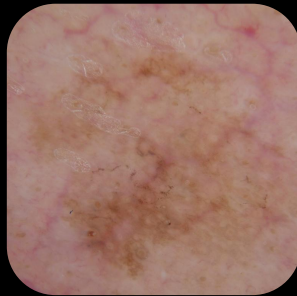
**Pneumonia
Model**

2 Classes



**Early Alzheimer's
Model**

3 Classes



**Skin Cancer
Model**

9 Classes

Screen
nVisio
n AI

Live
demo