

A decorative graphic on the left side of the slide consisting of two overlapping parallelograms. The front one is blue and the back one is a light green. They are positioned diagonally, with the blue one partially covering the green one.

# Current Findings

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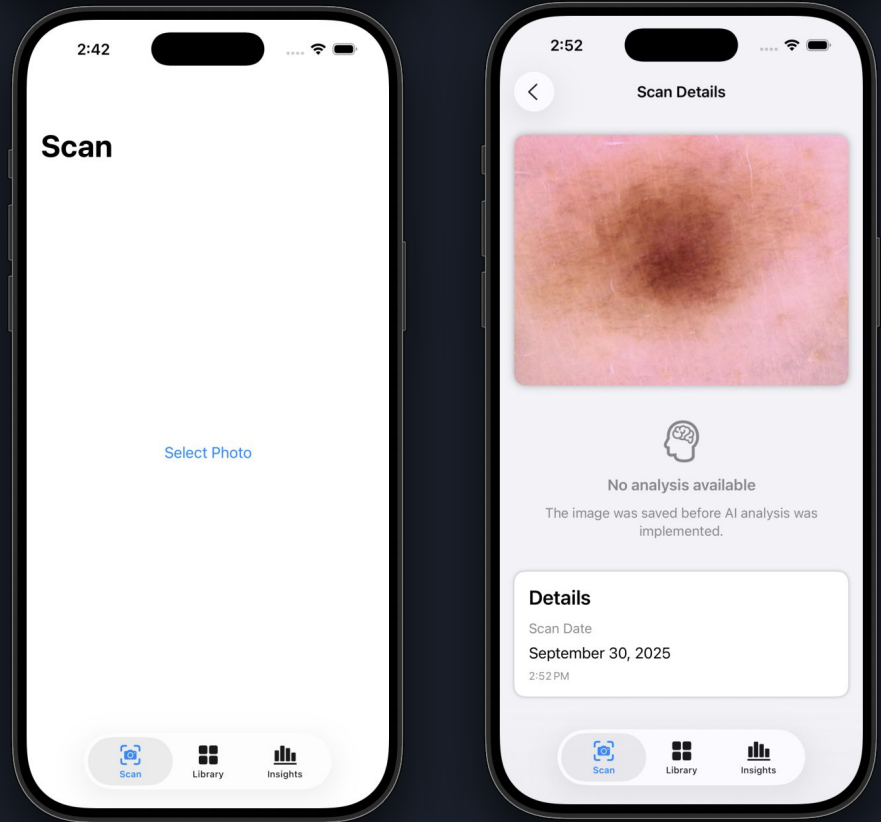


# Current Model

- Classify
  - 7 Classes: Actinic Keratoses, Basal Cell Carcinoma, Benign Keratosis, Dermatofibroma, Melanoma, Melanocytic Nevi, Vascular Lesions
- Specs
  - HAM10000 dataset
  - Mobile Vnet V2
    - 155 Base Layers (159 Total)
    - Total parameters: 4.3M
    - 70 unfrozen layers for transfer learning
    - Epochs: 15 Base / 15 Training
      - Overfitting issue
    - Early Stopping, Model Checkpoint, Class Weighting
    - Input Size: 224x224x3
- Metrics
  - 66.5% classification accuracy
  - AUC 92.3%
  - Loss: .974

# IOS App

- Select image
- Analyze
  - Pass to classification model
- View details
  - Classification
  - Confidence
- View all submissions





# Negatives

- Did transfer learning on a CNN rather than fine tuning a pre-available model on hugging face to be able to jumpstart progress
  - Comparable model had 93.6% classification accuracy, but much larger and not available for download
- Model has much lower accuracy than originally expected
  - Hoping for over 90%, currently 66.5%
- Model isn't quite integrated



# Positives

- Model has High AUC: 92.7%
- Works fast



# Moving Forward

- Improve model accuracy
  - Perhaps try larger model and then quantize
- Improve Data Preprocessing
  - Format image to work with current model
  - Augmentations to add variations
  - Clean data
- Implement Grad-CAM
  - Heatmap for explaining classification decisions