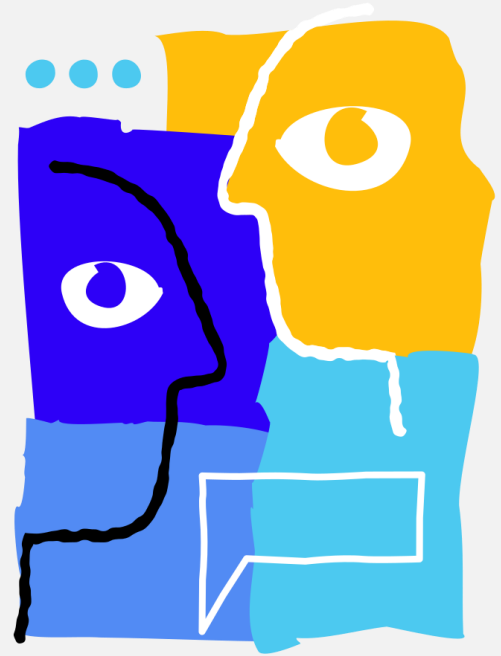


# Age Detection with CNN and Feature Extraction

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# INTRO- DUCTION

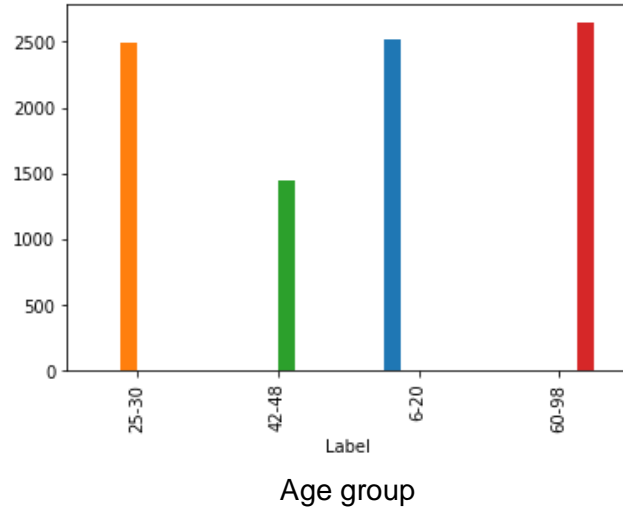
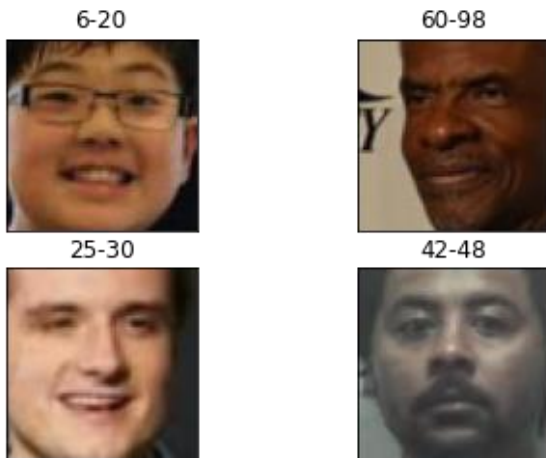
- Why age detection?
- Elderly and children
- Better presentation
- Age specific Ads



# THE DATASET

## Age recognition dataset

- 9097 images
- 4 Age groups (6-20, 25-30, 42-48, 60-98)



# SELECTED SOLUTION

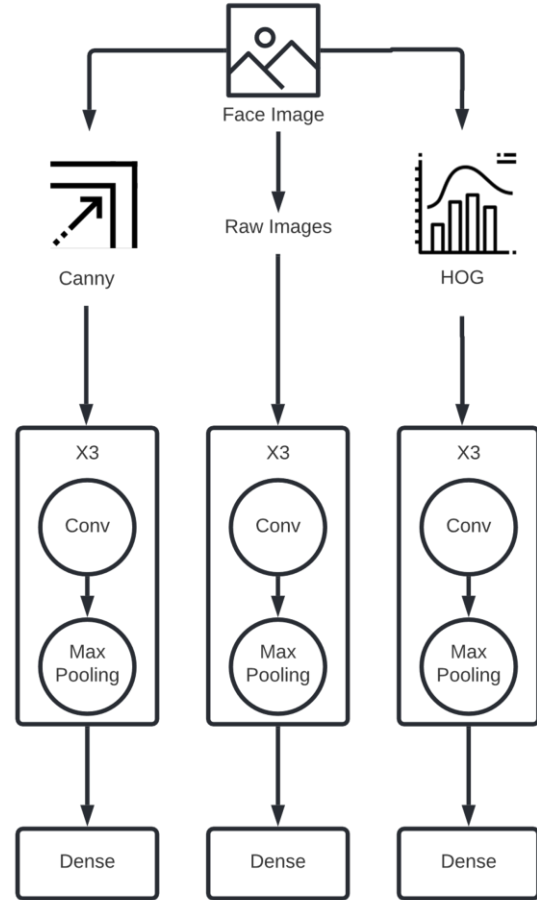


## **Convolutional Neural Network (CNN)**

- With feature extraction
  - HOG descriptor
  - Canny edge detector
- Without feature extraction

# SOLUTION PIPELINE

- 3 Different inputs
  - raw images
  - images w/HOG descriptor
  - images w/ Canny edge detector
- CNN
- Layers: x3 (Conv / Pooling) + Dense
- Maximize accuracy



# STEP 1: PREPROCESSING

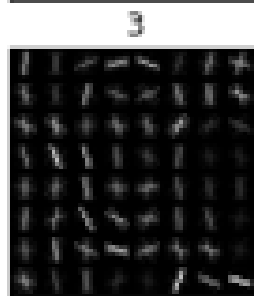
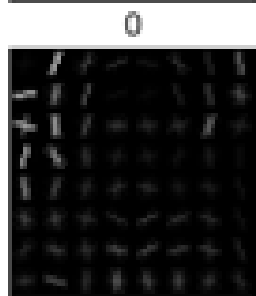
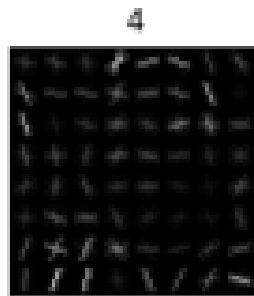
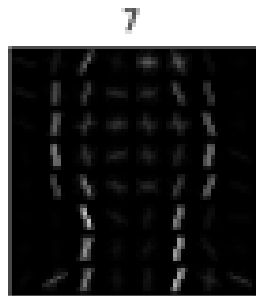


Raw Images

Gray Images

Blur Images

# STEP 2: FEATURE EXTRACTION



HOG

Canny

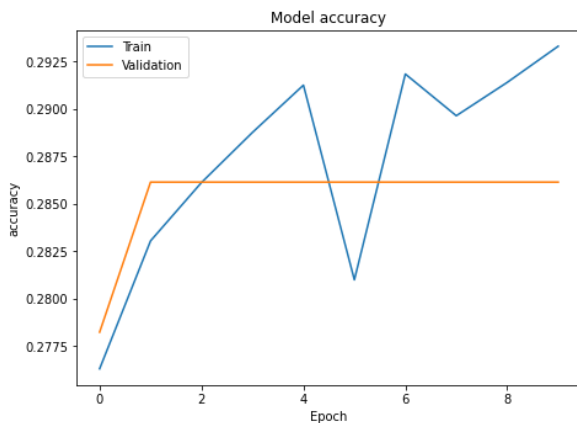


# STEP 3: MODELING

- 3 Different inputs
  - raw images
  - images w/HOG descriptor
  - images w/ Canny edge detector
- CNN
- Layers: x3 (Conv / Pooling) + Dense
- Maximize accuracy

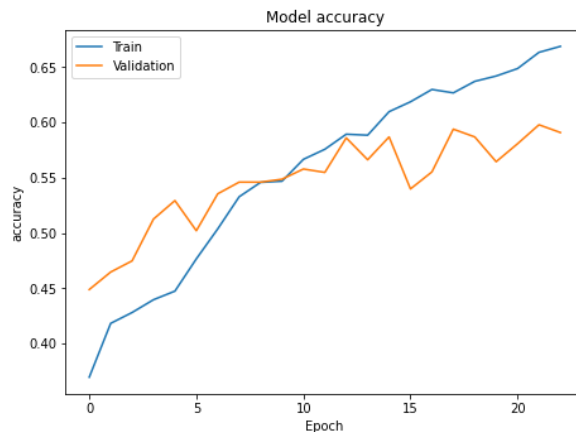
# STEP 4: TESTING AND RESULTS

HOG



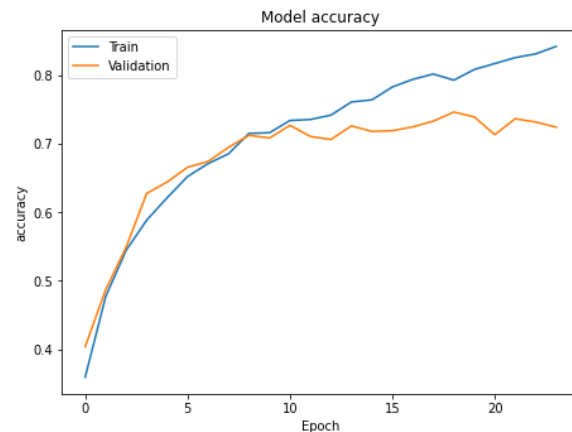
Val accuracy  
29%

Canny



Val accuracy  
60%

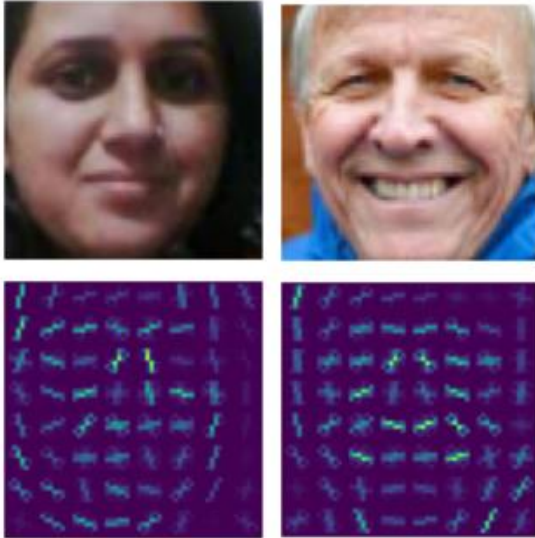
Raw images



Val accuracy  
**74%**

# SAMPLE OUTPUT

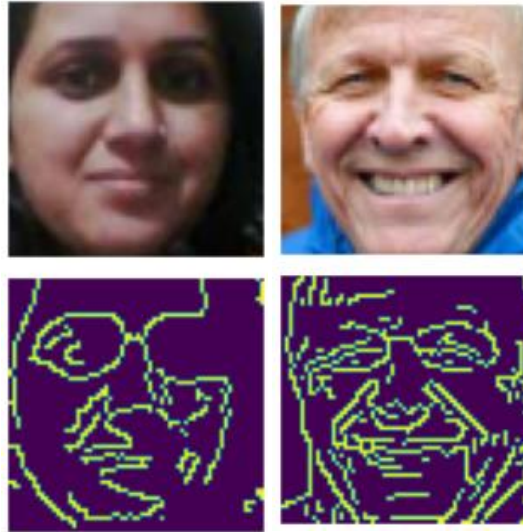
HOG



60 - 98  
25 - 30

60 - 98  
60 - 98

Canny



25 - 30  
25 - 30

60 - 98  
60 - 98

Raw images



25 - 30  
25 - 30

60 - 98  
60 - 98

# LIVE DEMO



# THANK YOU



CREDITS: This presentation template was created by Slidesgo, including icons by Flaticon and infographics & images by Freepik and Icons8