Facial Keypoint Detection

DEEP-LEARNING

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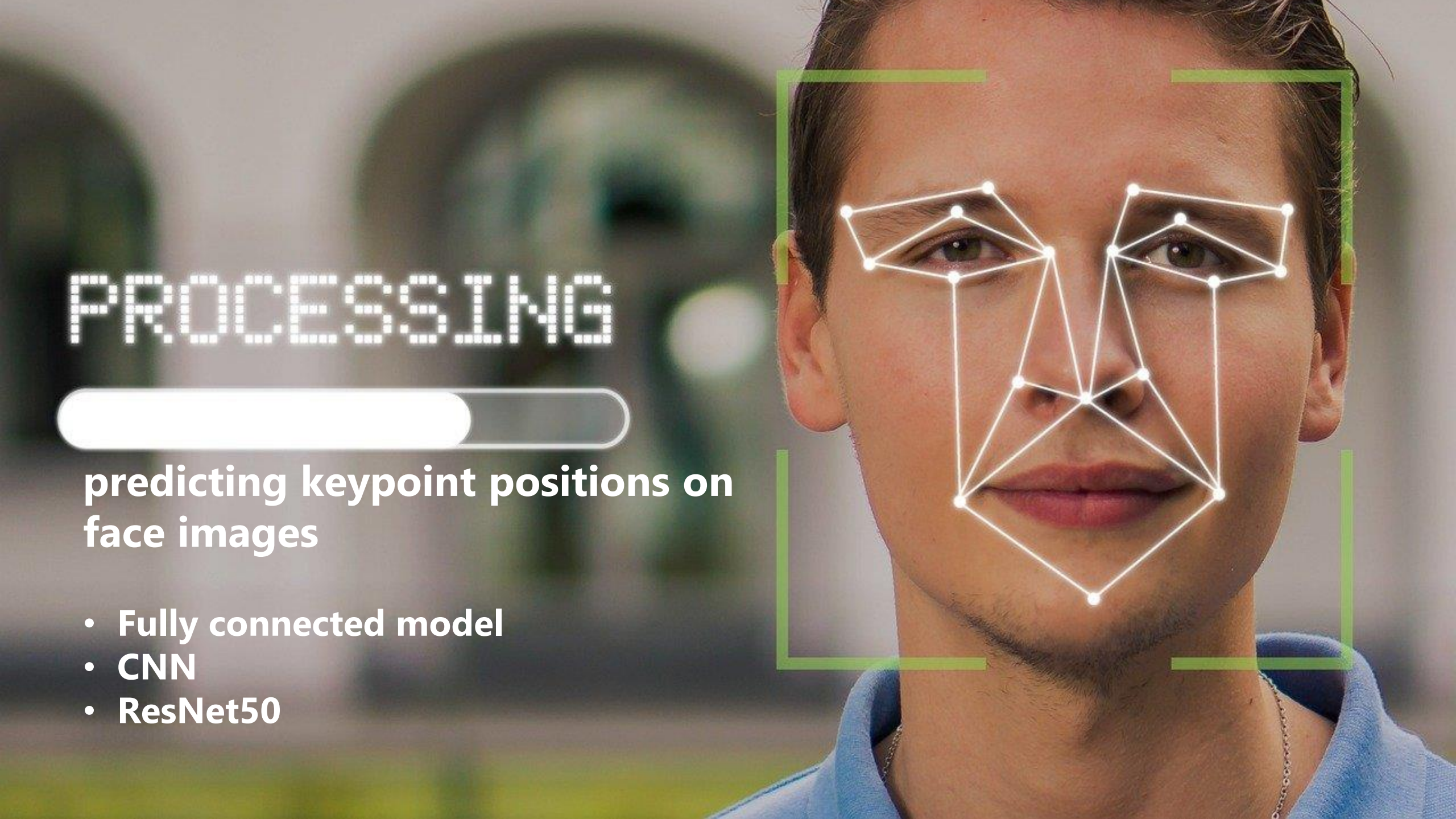
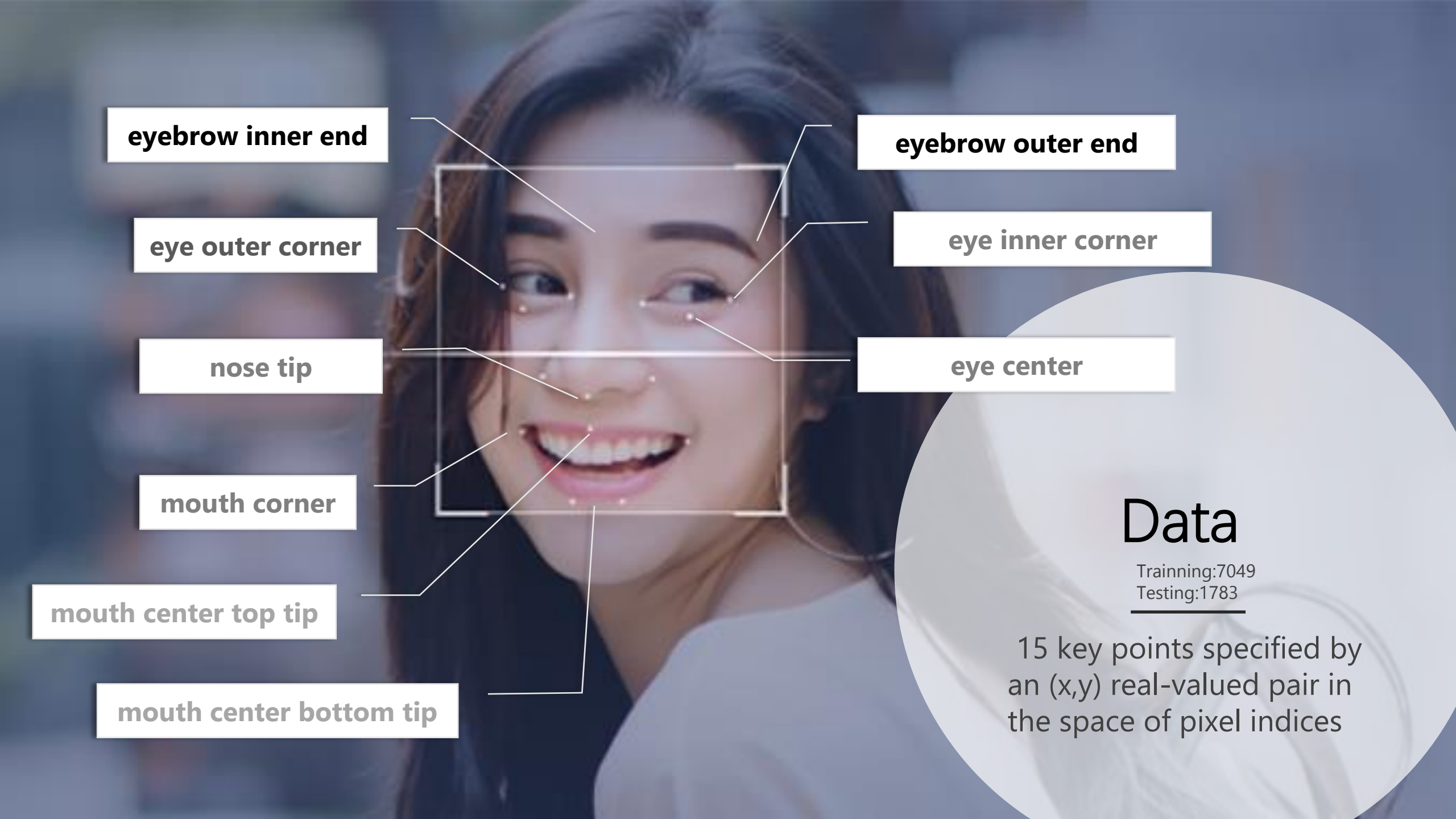


predicting keypoint positions on face images

- **Fully connected model**
- **CNN**
- **ResNet50**



Data

Trainning:7049
Testing:1783

15 key points specified by an (x,y) real-valued pair in the space of pixel indices

Algorithms

Fully connected model + SGD

Pre-trained ResNet50 model

CNN model+ Augmentation + Transfer learning(CNN base)

Comparison

	LOSS	MAE	Accuracy
Fully connected model + SGD	0.01/0.01	0.03/0.03	0.68/0.67
Pre-trained ResNet50 model	0.0005/0.0001	0.018/0.007	0.87/0.93
CNN model+ Augmentation + Transfer learning	0.06/0.002	0.17/0.06	0.93/0.98

Tools

- Keras
  - MaxPooling2D, Conv2D , Flatten, Dropout
  - BatchNormalization
  - EarlyStopping, ReduceLROnPlateau
  - ResNet50
- Matplotlib
- Sklearn
  - Shuffle
  - train_test_split
- Numpy &Pandas
- OrderDict


Thank you