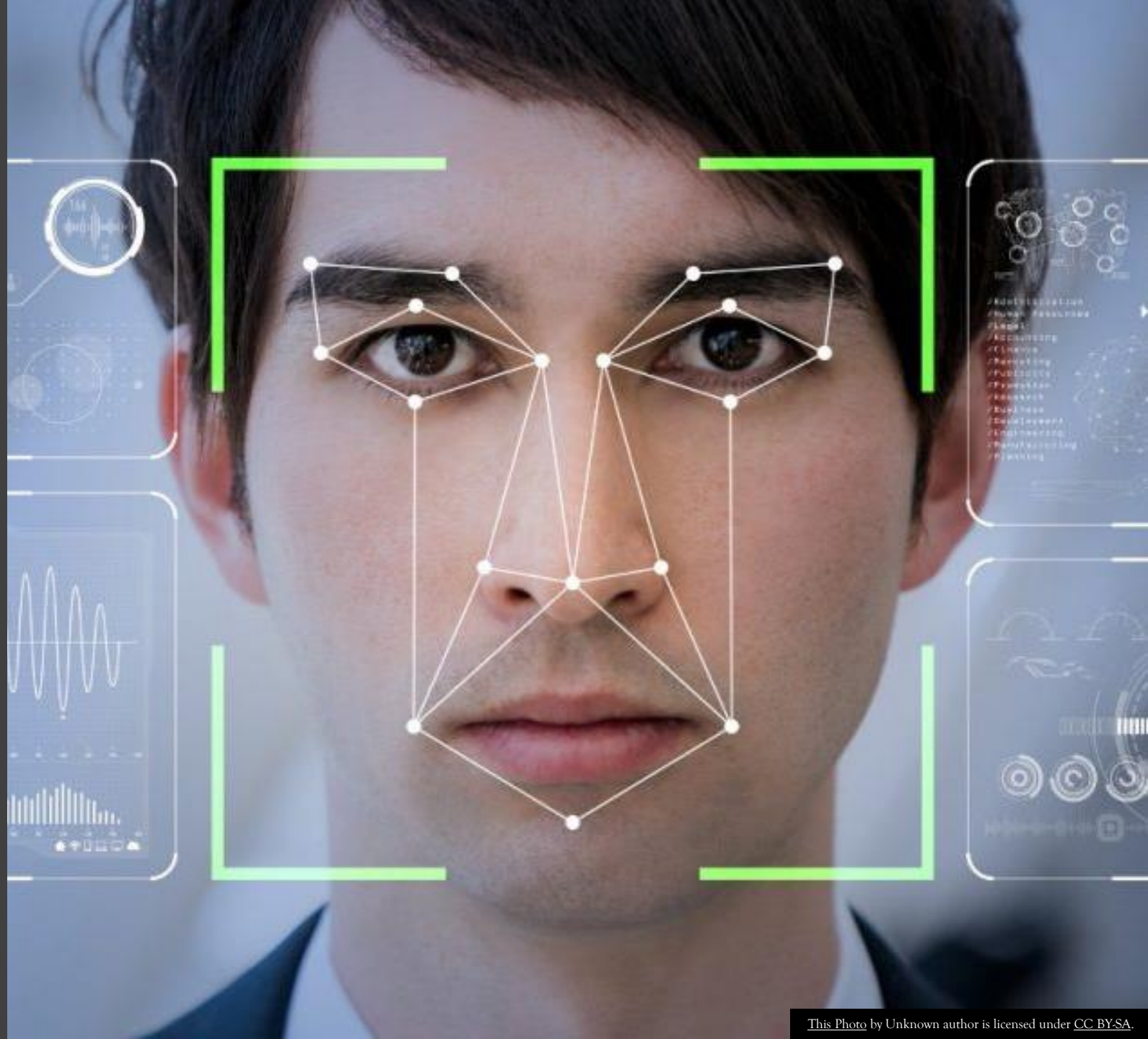
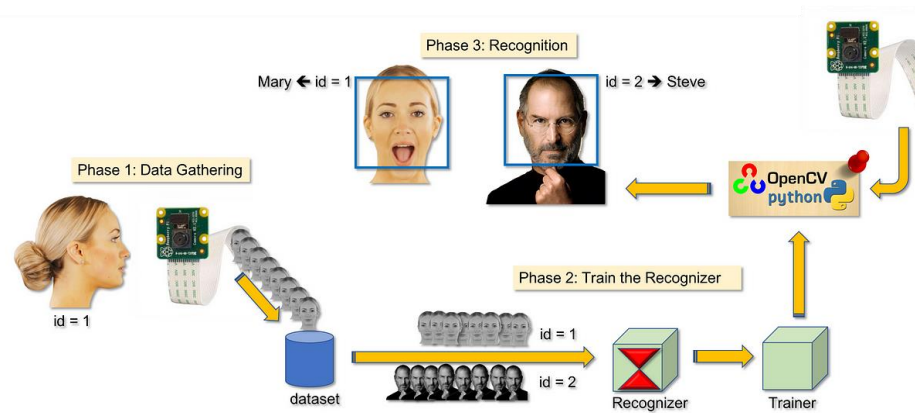


# *Face Recognition using AlexNet*

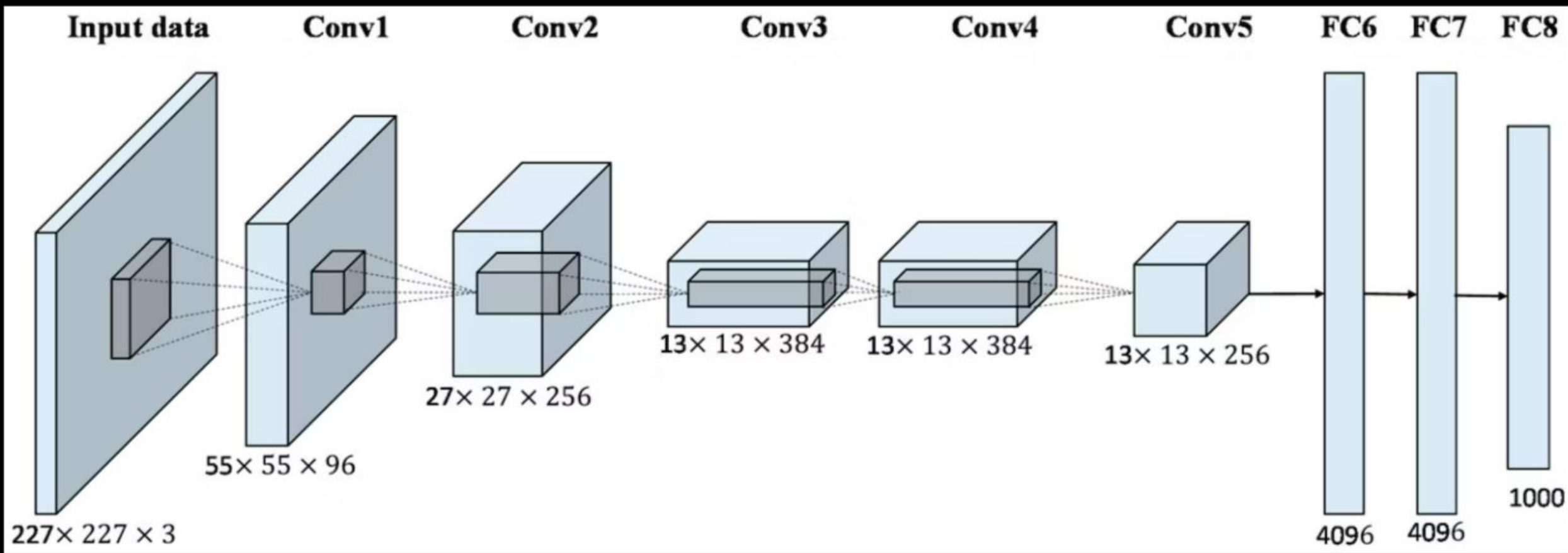
Kaushal Kumar Kumawat



# Introduction

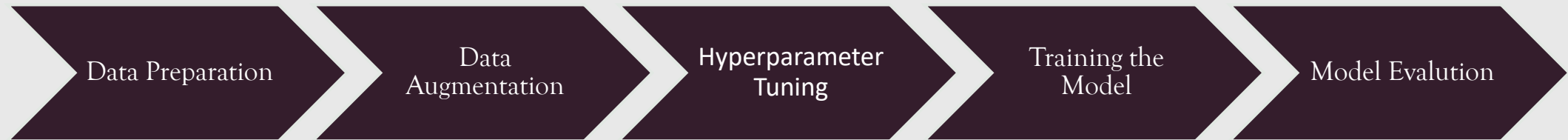


- Face recognition is a rapidly growing field with numerous real-world applications, from security and surveillance to personalized marketing and social media. In this presentation, we will explore the use of AlexNet architecture for face recognition, covering all aspects of the process from dataset preparation to real-world applications. By the end of this presentation, you will have a solid understanding of the key concepts and techniques involved in face recognition using AlexNet.

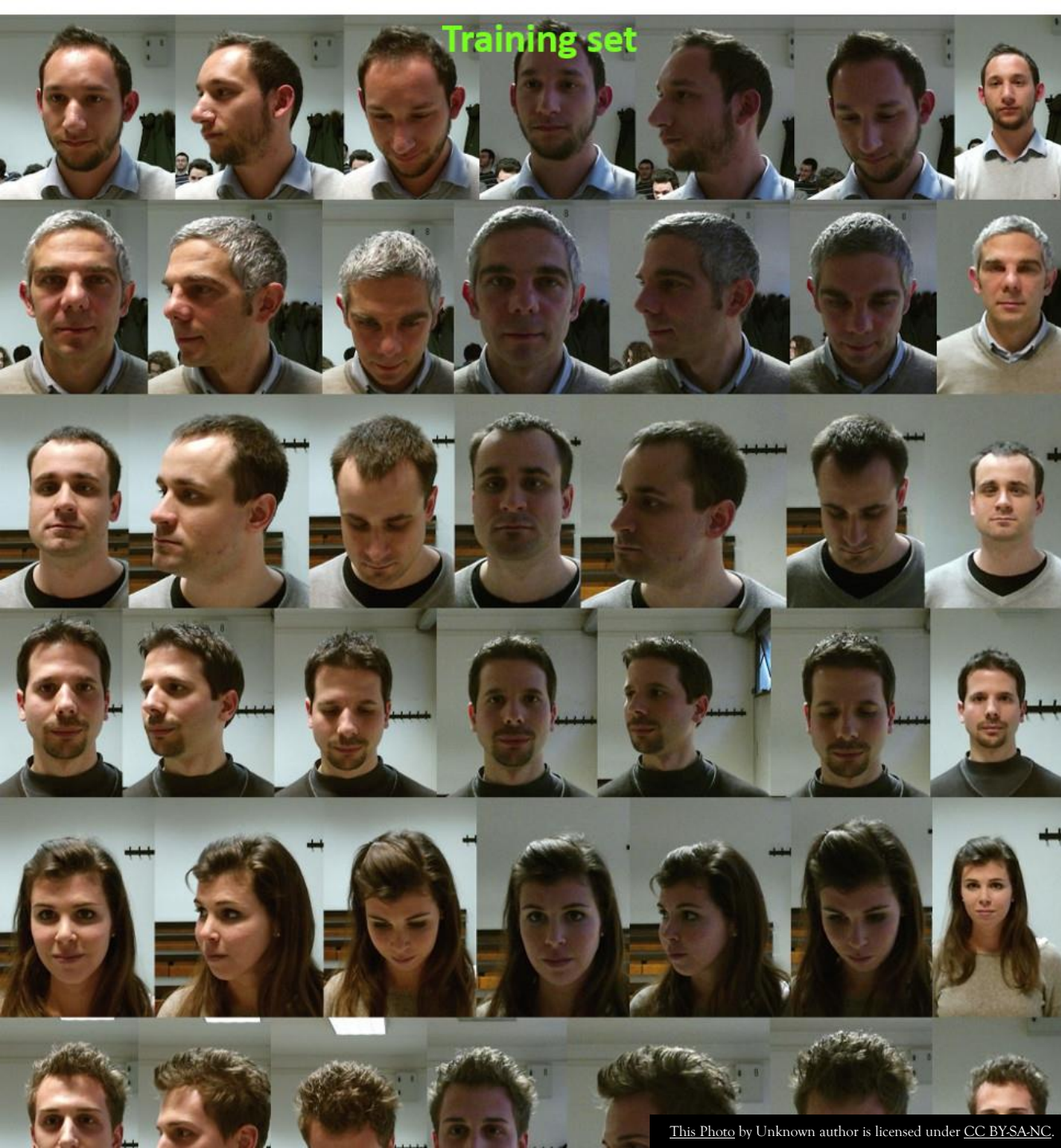


# ALEXNET ARCHITECTURE

# *Process of Training The Model*



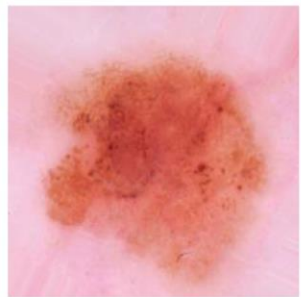




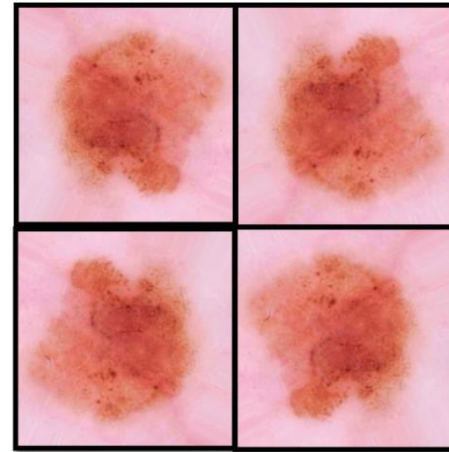
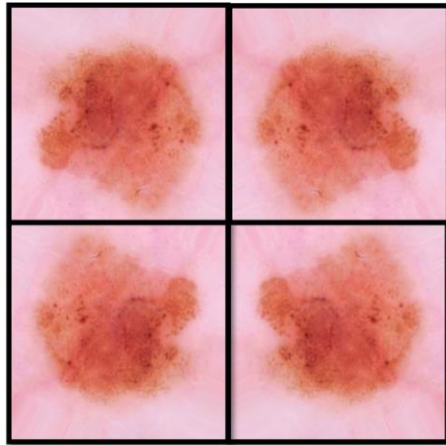
# Dataset Preparation

- Before training the model, the dataset must be prepared. This includes formatting the data, labeling it, and splitting it into training, validation, and test sets.

## Data-Augmentation



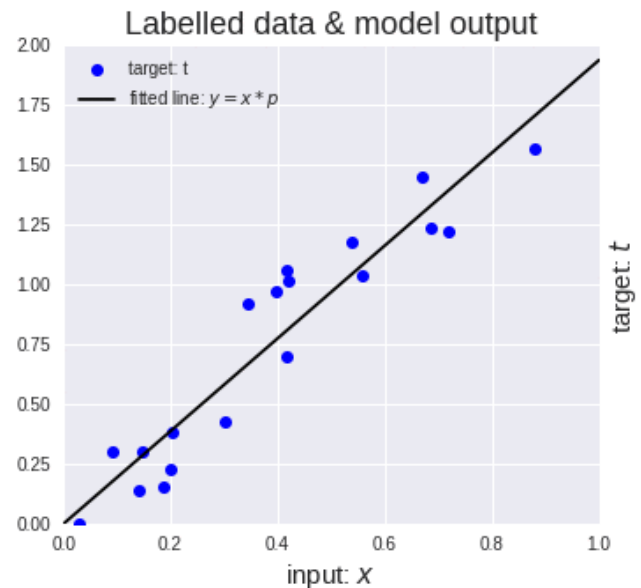
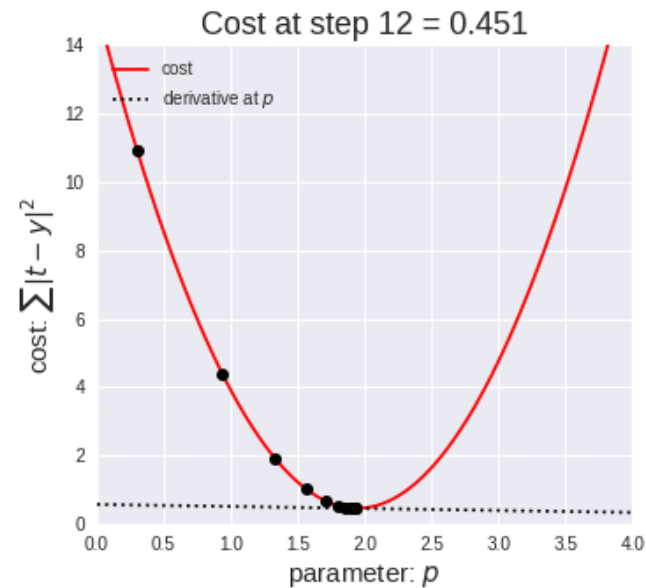
600x450



227 x 227

## Data Augmentation

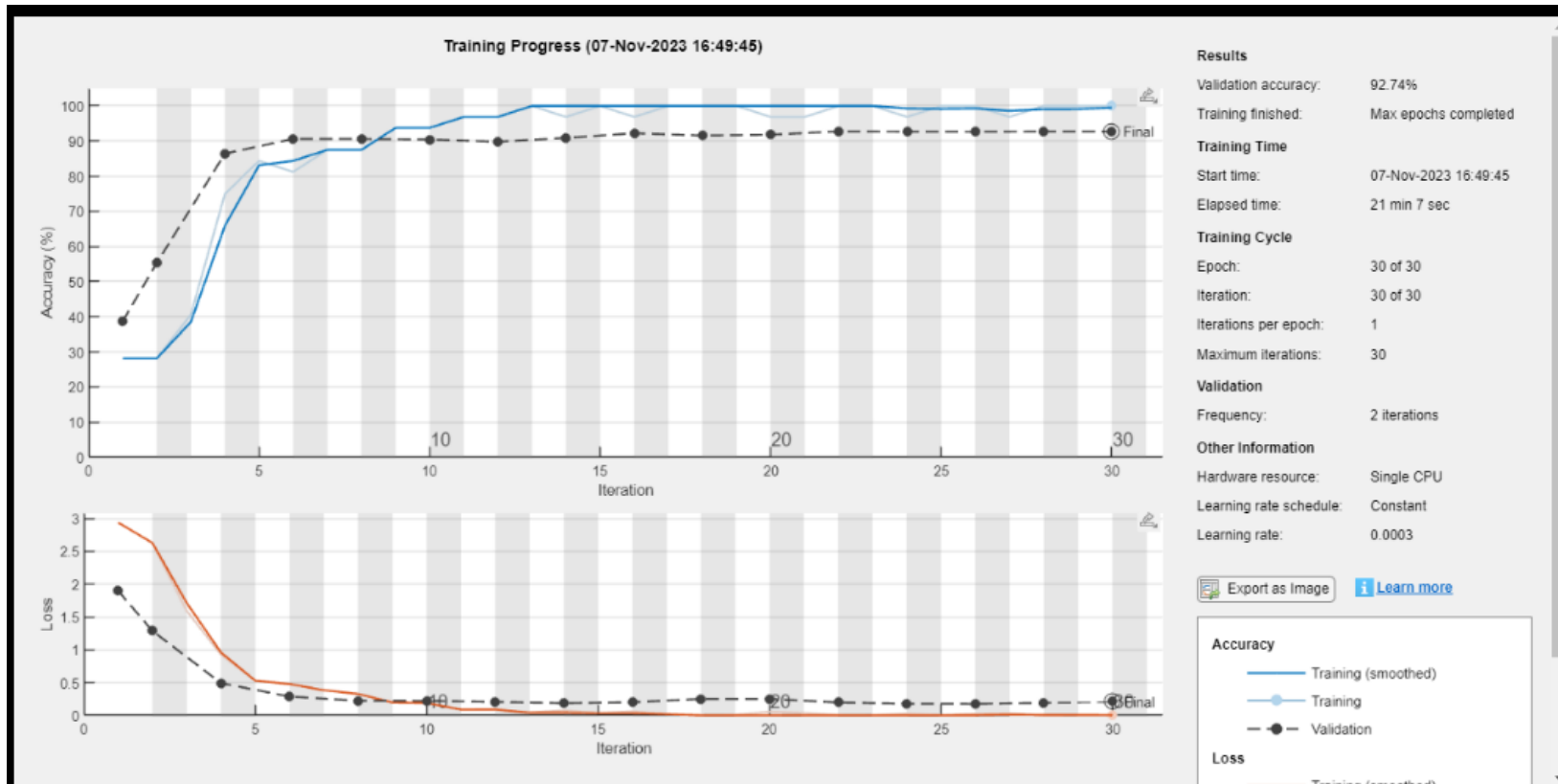
- To increase the size and diversity of the dataset, data augmentation techniques such as flipping, rotating, and scaling images can be applied.



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# Hyperparameter Tuning

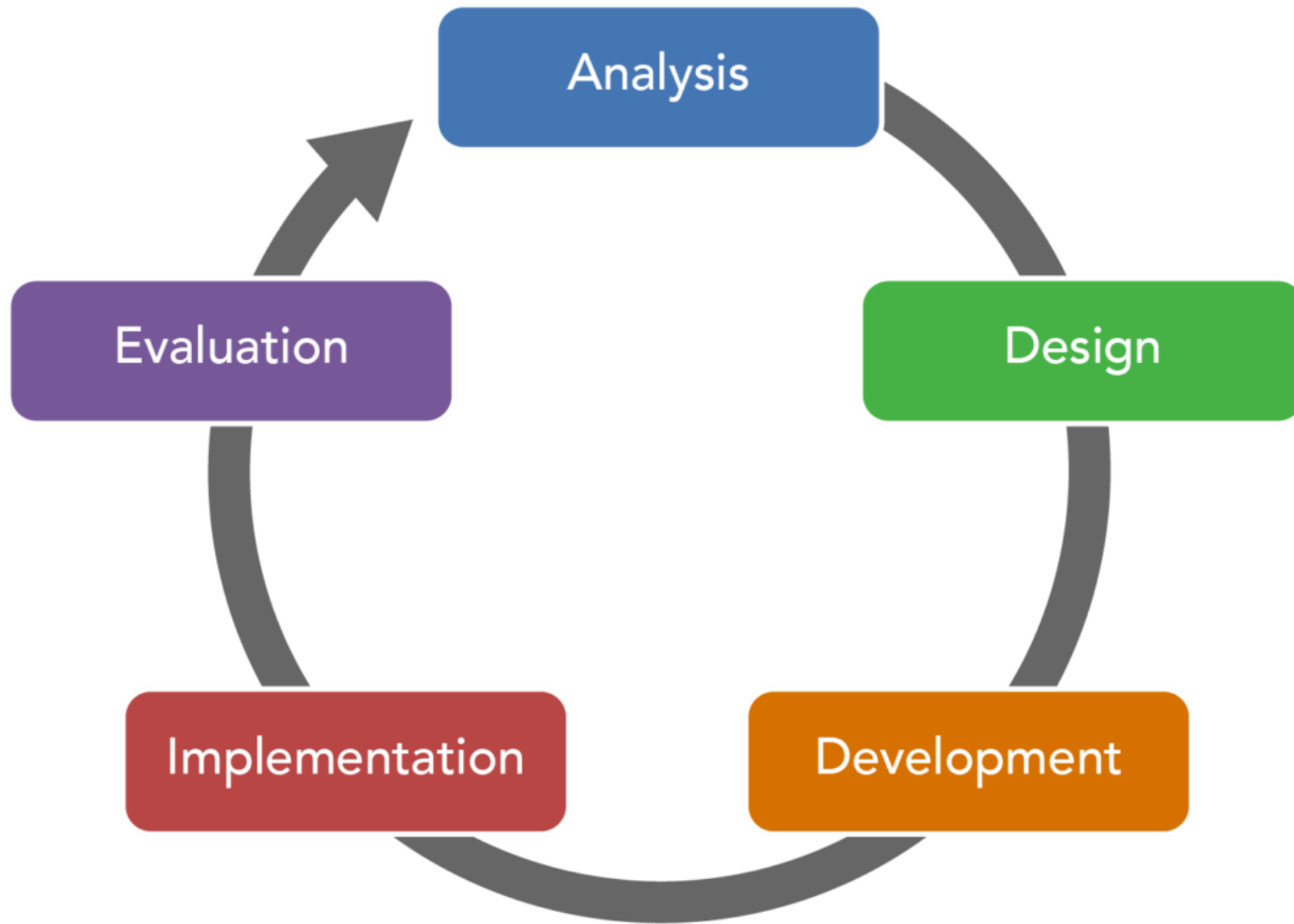
- Hyperparameters such as learning rate, batch size, and number of epochs can greatly affect the performance of the model. These hyperparameters are tuned using techniques such as grid search or random search.



# Training the Model

- The AlexNet model is trained using stochastic gradient descent with backpropagation. The model is fed batches of data and the weights are adjusted based on the error between the predicted output and the actual output.





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## Model Evaluation

- The performance of the model is evaluated using metrics such as accuracy, precision, recall, and F1 score. The model is tested on the validation and test sets to ensure it is not overfitting to the training data.

# Real-World Applications



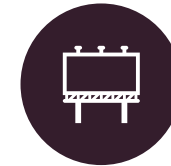
**Face recognition** using AlexNet architecture has numerous real-world applications across various industries. Some of the most prominent applications include:



**Security and surveillance:** Face recognition can be used for security and surveillance purposes, such as identifying suspects in criminal investigations or tracking individuals in public spaces.



**Access control:** Face recognition can be used for access control in various settings, such as unlocking smartphones or granting access to secure facilities.



**Marketing and advertising:** Face recognition can be used for targeted marketing and advertising, such as identifying customer demographics and preferences.



**Healthcare:** Face recognition can be used for healthcare purposes, such as patient identification and monitoring.

# Limitations

- AlexNet is computationally expensive and requires powerful hardware to train and run the model.
- The model may not perform well on faces that have significant variations in pose, lighting, or expression.
- There are concerns about the ethical implications of using facial recognition technology, particularly in regards to privacy and potential biases in the data used to train the model.

*THANK YOU*

