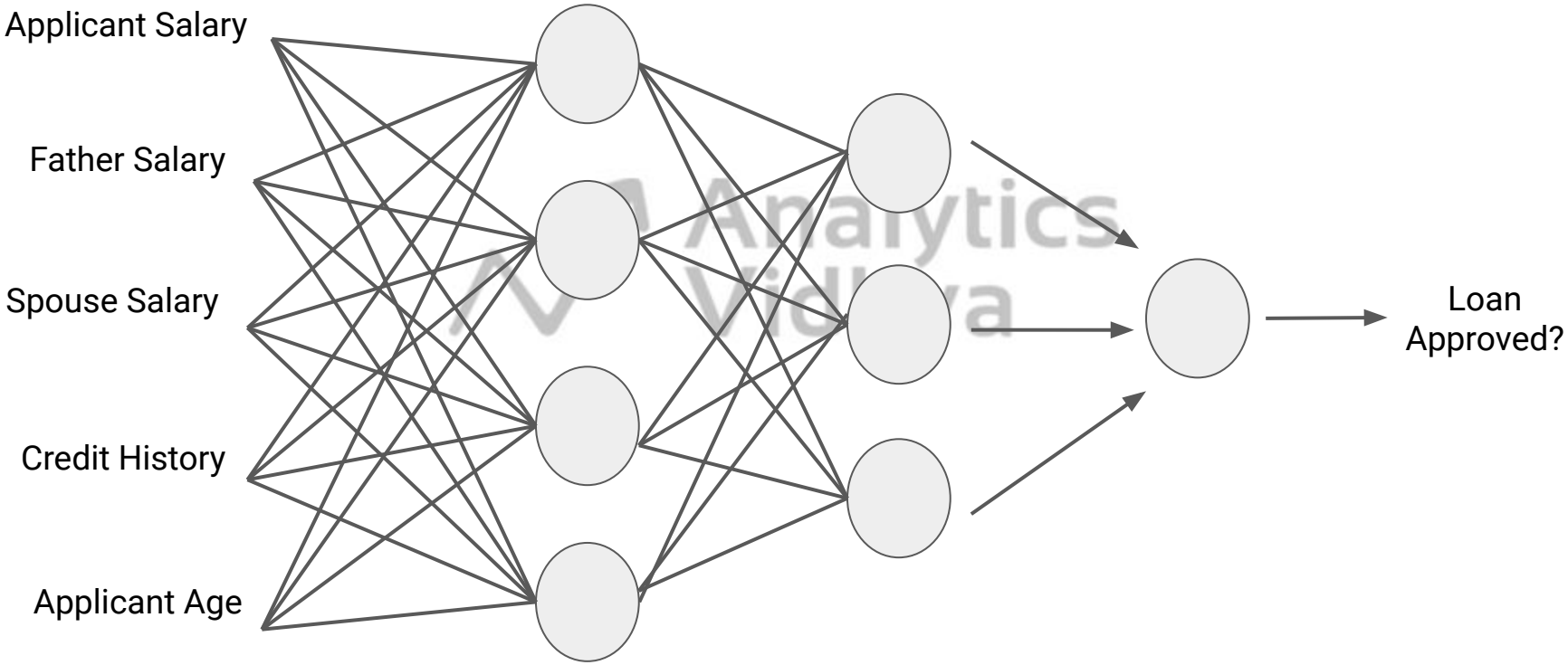
Use Cases in Deep Learning for Image Data

Analytics Vidhya

Analytics Vidhya
Learn everything about analytics

Classification on Structured Data using MLP



Classification on Structured Data using MLP

Analytics Vidhya
Learn everything about analytics

Image Classification using MLP/CNN

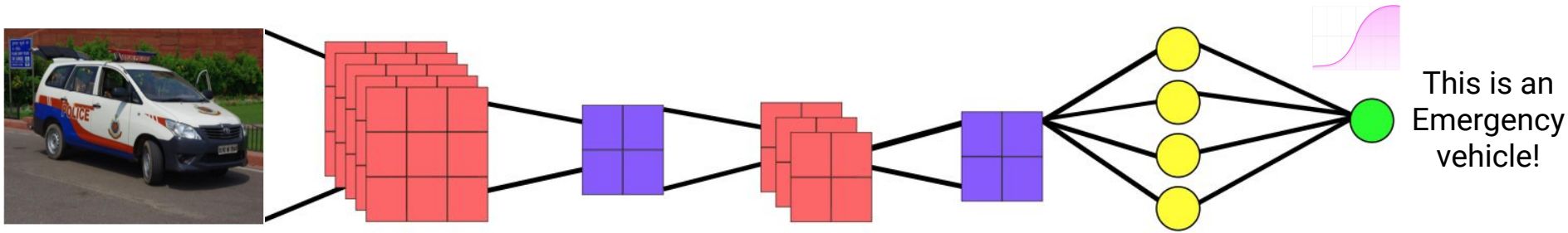


Image Classification using CNNs

Analytics Vidhya
Learn everything about analytics

Regression using Deep Learning

Analytics Vidhya

Analytics Vidhya
Learn everything about analytics

Age Prediction

Analy
Vidhy

Analytics Vidhya
Learn everything about analytics

Age Prediction

Age: 26

Age: 12

Analy
Vidhy

Analytics Vidhya
Learn everything about analytics

Steps for performing Age Prediction

Analytics Vidhya
Learn everything about analytics

Steps for performing Age Prediction

- Read images as numpy arrays and proprocess them

Analytics Vidhya

Analytics Vidhya
Learn everything about analytics

Steps for performing Age Prediction

- Read images as numpy arrays
- Create a Neural Network model architecture

Analytics Vidhya

Analytics Vidhya
Learn everything about analytics

Steps for performing Age Prediction

- Read images as numpy arrays
- Create a Neural Network model architecture
    - Apply Linear Activation at the last layer instead of Sigmoid

Analytics Vidhya

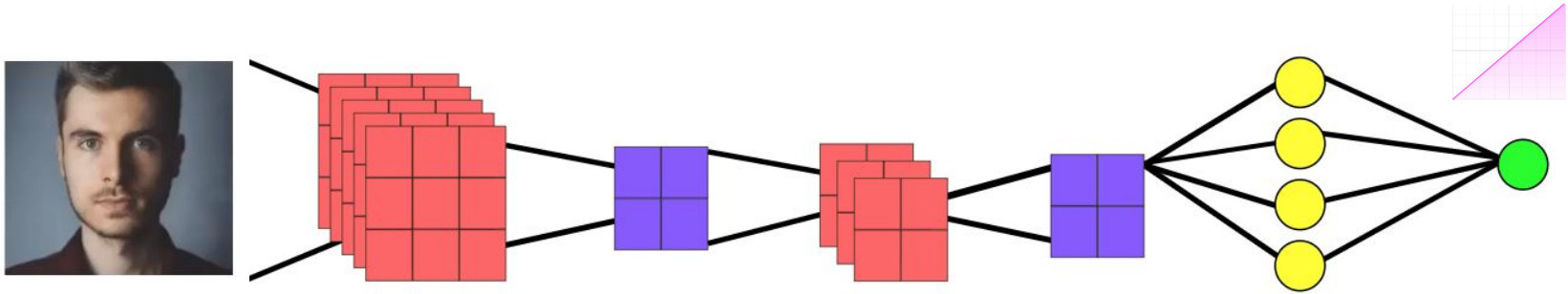
Analytics Vidhya
Learn everything about analytics

Steps for performing Age Prediction

- Read images as numpy arrays
- Create a Neural Network model architecture
    - Apply Linear Activation at the last layer instead of Sigmoid
- Train the model and get predictions

Analytics Vidhya
Learn everything about analytics

Age Prediction



Regression on images using CNNs

Analytics Vidhya
Learn everything about analytics

Object Detection

Analytics Vidhya

Analytics Vidhya
Learn everything about analytics

What is Object Detection?

Single Object

Analytics Vidhya

Analytics Vidhya
Learn everything about analytics

What is Object Detection?

Single Object

Multiple Objects -
Single Class

Multiple Objects -
Multiple Classes

Analytics Vidhya
Learn everything about analytics

What is Object Detection?

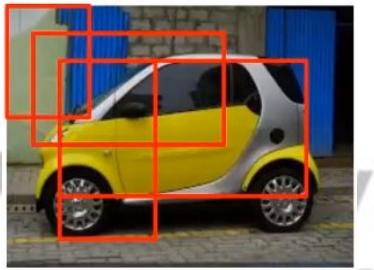
Single Object

Multiple Objects -
Single Class

Multiple Objects -
Multiple Classes

Analytics Vidhya
Learn everything about analytics

Object Detection



Patch Extraction

Classification

Analytics Vidhya
Learn everything about analytics

Object Detection

End to End Deep Learning Model

Class

Coordinates of bounding box

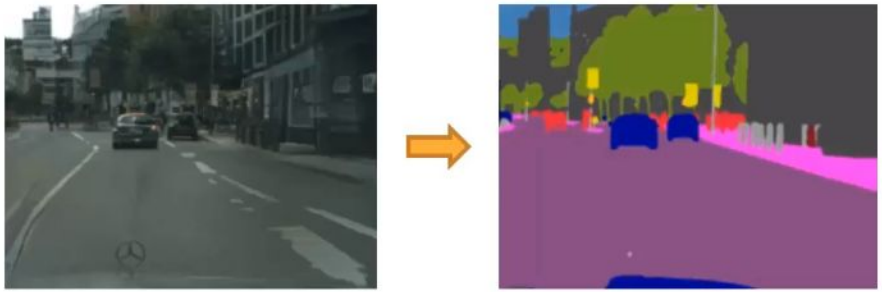
Analytics Vidhya
Learn everything about analytics

Image Segmentation

Analytics Vidhya

Analytics Vidhya
Learn everything about analytics

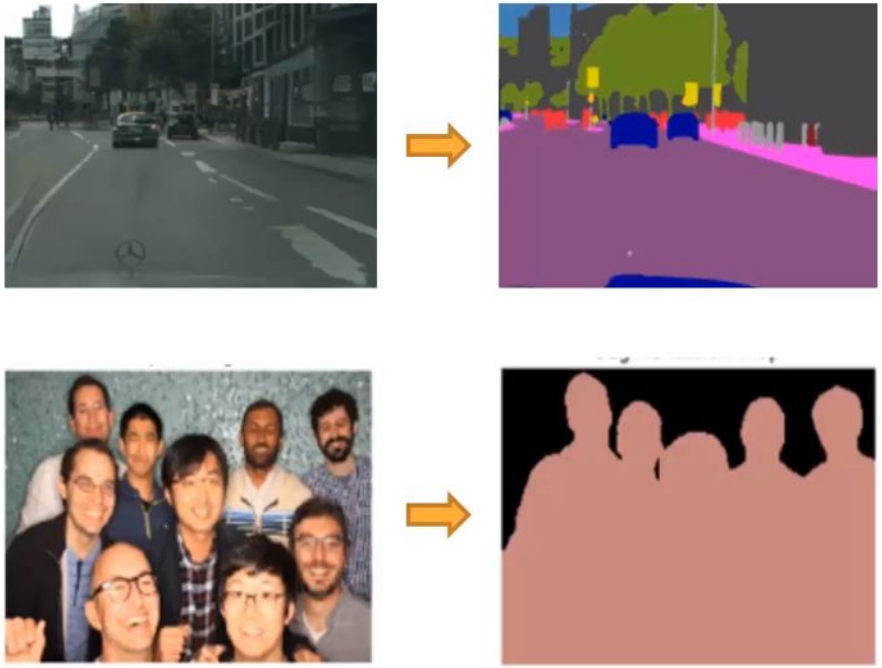
Image Segmentation



Pixel level classification

Analytics Vidhya
Learn everything about analytics

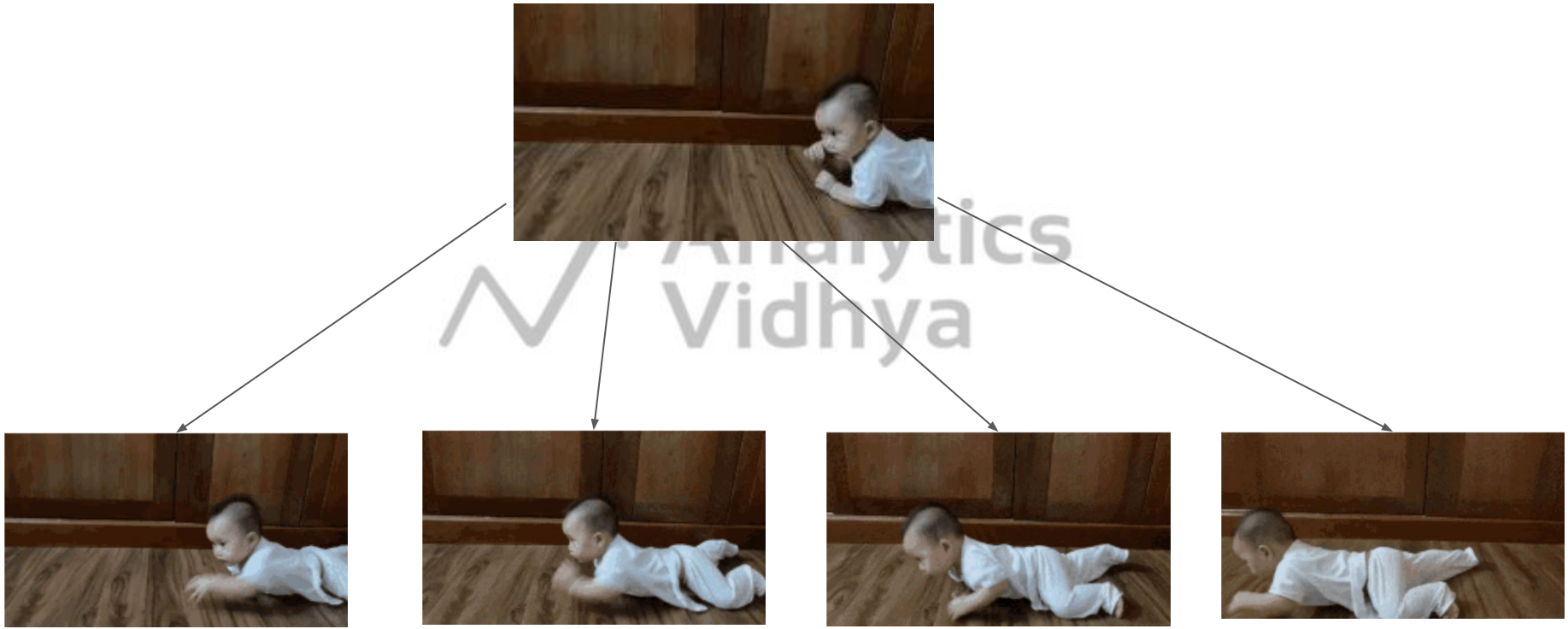
Image Segmentation



Pixel level classification

Analytics Vidhya
Learn everything about analytics

How to Analyse Video Data?



Sequence of frames

Analytics Vidhya
Learn everything about analytics

Thank You

Analytics Vidhya
Learn everything about analytics