## Anonymi my Videos

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## NCCA Problem

## NCCA Solution

### Research

- Assessments based on videos
- GDPR
- Preserve minors of age identity
- Biased Marking

- Biased Marking
- Preserve minors of age identity



videos

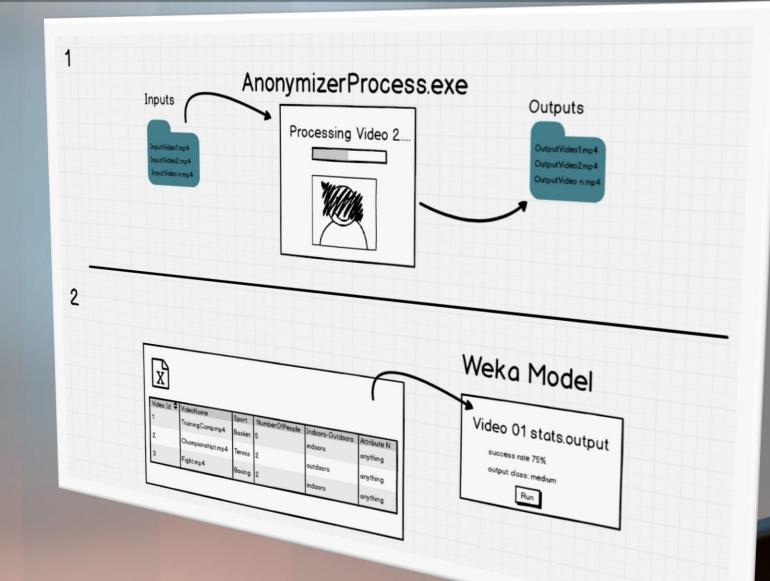


Project

# How do we solve this problem?

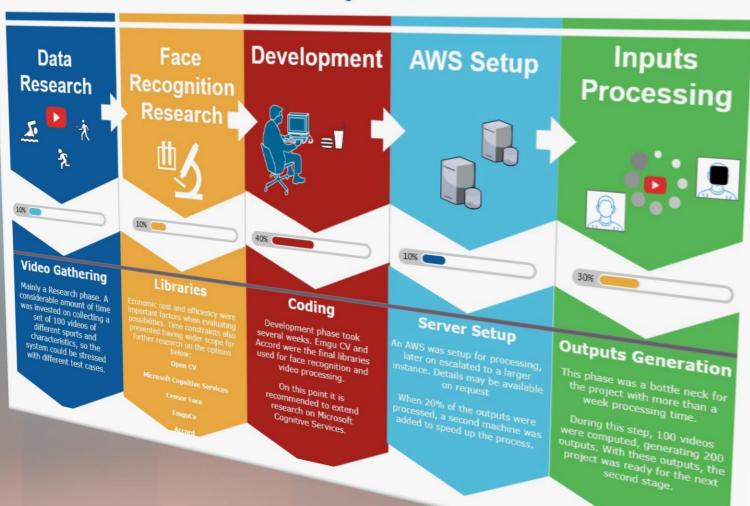
Software **Data Analytics** Development **Prediction** Blur.exe Model

# Integration



# 1st Phase

#### **Video Anonymizer**



# Sports













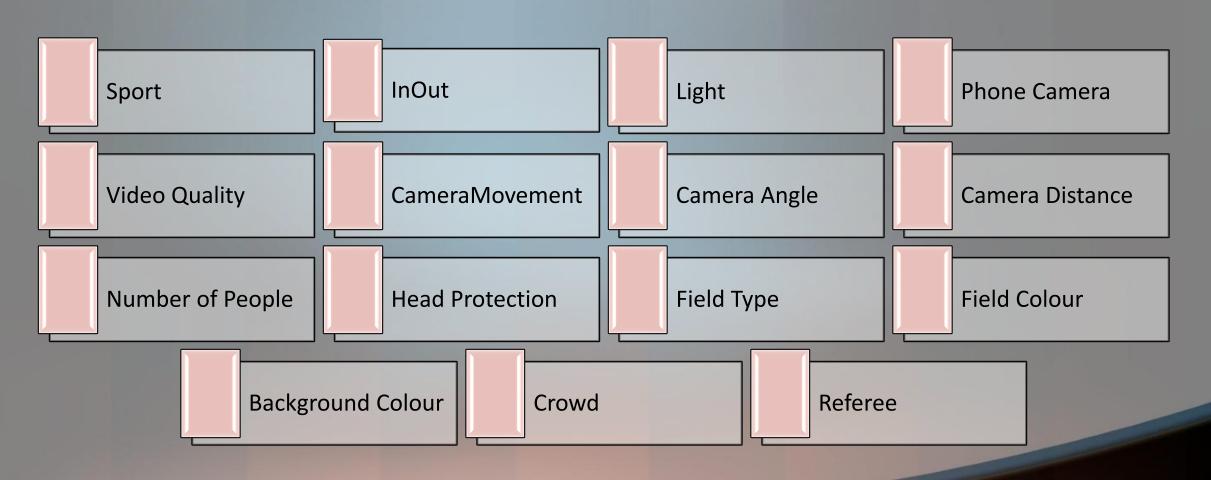








### **Video Attributes**



### 2<sup>nd</sup> Phase

#### **Data Analytics Phase**

#### **Attribute Extraction**



### Video Gathering

Research was done on which attributes of the videos could have an impact on the output results. The output of this research was a set of attributes such as light, or cam quality. Full list can be found in next section of the document.

## Inputs



30%

#### Attributes

### Outputs Classification Classification



### **Output Scale**

A 10-scale table was created to classify all the outputs. Re-visualization of all the outputs was required for final classification.

#### Model



#### **WEKA**

WEKA tool was used for data analysis, data pre-processing, attribute selection and final model selection. This model would predict the quality of the outputs produced on the first phase, based on a 1-10 scale (see appendix section) and on a binary "good" "bad" scale.

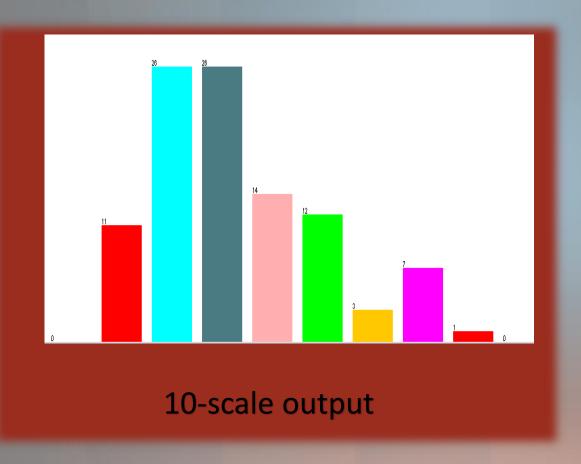
# Difficulties / Constraints / Risks

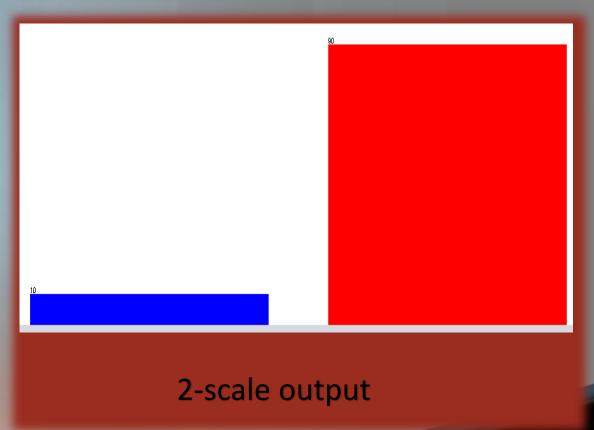
Manual Video Classification

Video Accuracy Blurring
Processing
Time

Time

## Model development – 2 Scales





### **Model Results**

#### Attribute set 1

In-out
Camera Angle
Camera Distance
People Number
Crowd
Referee

| Attribute<br>Set | Algorithm   | Accuracy | Sensitivity | Specificity |
|------------------|-------------|----------|-------------|-------------|
| 1                | Naïve Bayes | 91%      | 100%        | 90%         |
| 1                | Trees.J48   | 89%      | 30%         | 95.5%       |
| 2                | Naïve Bayes | 94%      | 90%         | 94.4%       |

#### Attribute set 2

In-out
Camera Angle
Camera Distance
People Number
Crowd
Referee

# Summary

## Findings

- Library limitations
- Relevant attributes

## Recommendations

- Investigate other libraries
- Improvements or tips to boost accuracy