COINs Seminar Project at University of Cologne and Hochschule Luzern

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COINs Virtual Brownbag
Can you predict one's personality and values based on their facial reactions to a video?
Data Collection: Website that records one’s Facial Expression while playing a video
Model Training: Facial Expression and Happimeter Data

Predictor Variable:

Target Variable:
Data Collection: Website utilizes state of the art architecture and technology

**Face Recognition**
Recognizing emotions by utilizing the power of neural networks implemented on top of the tensorflow.js core API

**User Interface**
User interface developed using the React JavaScript library

**HTTP/REST**

**DB**

```
{{
  _id: "527fcd9fd86b68bb34d2a943882f882f8",
  "user": {},
  "emotions": {
    "neutral": 0.345321398653968428,
    "happy": 0.000000000000000000,
    "sad": 0.84567890123456789012,
    "angry": 0.000000000000000000,
    "neutral": 0.567890123456789012,
    "disgust": 2.34567890123456789012,
    "surprised": 0.000000000000000000
  }
}}
```

**API**

- Data Transfer
- Calculate Average Emotions
- Calculate Prediction

TBD
Data Preparation: Data Merging and Feature Engineering

- Decryption
  - Decrypting the AES (Advanced Encryption Standard) decrypted email addresses

- Merging
  - Merging emotion data with happimeter data on email addresses and remove email address information afterwards

- Feature Engineering
  - Calculate features by averaging emotion data per section and user

Happimeter Survey Results
Emotions from Facial Recognition

Single person handles sensitive user data
# Prediction: Developing the Prediction Model is Obstructed by Three Problems

| **Problem:** 60 of 100 samples left after data cleansing and merging with happimeter survey results. |
| **Solution:** Collect more data and ask users to do at least one happimeter survey. |

| **Problem:** More dimensions than features \((p>n)\) |
| **Solution:** Dimension reduction by feature selection or PCA. |

| **Problem:** Fear, anger and disgust is difficult to trigger and produces little response |
| **Solution:** n.A. |

<table>
<thead>
<tr>
<th><strong>60</strong></th>
<th><strong>100</strong></th>
<th><strong>≈0</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Samples</td>
<td>Dimensions</td>
<td>Emotion Intensity</td>
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</table>
Your help by completing the surveys and watching the video would be very much appreciated

https://coinproject.compel.ch

https://www.happimeter.org