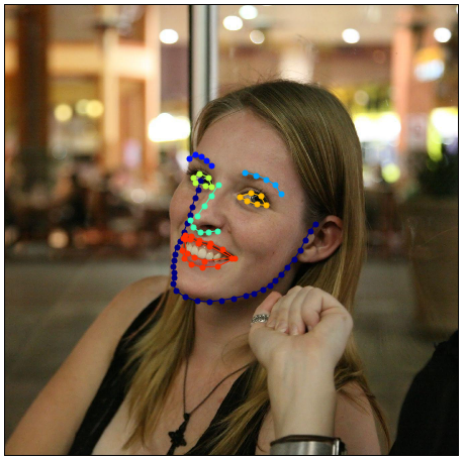
NTNU
Norwegian University of Science and Technology

Norwegian Biometrics Laboratory (NBL) is a distinguished research lab contributing actively to the biometrics research across Europe. NBL spans its expertise over physiological and behavioral biometrics including 2D & 3D face, iris, hand vein, gait, keystroke, gesture and mouse dynamics recognition.

Master Thesis: **Face recognition in video using landmark movements**

Motivation & Goals:



It has been shown that unstructured facial motions in videos can increase the accuracy of humans in identifying faces. However, in most applications, the performance of such features have been overlooked by the sufficiently good performance of the face recognition systems that rely on static images. An exception to this pattern is presentation attack detection (PAD) for biometric systems where the additional information that is hidden in the movement of facial landmarks can be used as an extra check for authenticity of the identity of the person. This however should be done using videos with short duration for convenience of the overall biometric system. [1]

Tasks:

- Extraction and registration of landmark information on a standard face recognition dataset
- Experimenting with different machine learning algorithms for identification of faces, based solely on facial landmark movements
- Analysis of the performance of the system for varying lengths of videos

Requirements:

- High motivation
- Interest in behavioral biometrics
- Good knowledge of machine learning
- Very good programming skills

Contacts:

If you are interested, please do not hesitate to contact us and discuss your topic in details.
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[1] Illustration from: Zafeiriou, Stefanos, et al. "The 3D Menpo Facial Landmark Tracking Challenge." *ICCV 3D Menpo Facial Landmark Tracking Challenge Workshop*. Vol. 5. No. 7. 2017.