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**Пояснительная записка №1**

**«По методам распознавания лиц по RGBD»**

**ОКР «Разработка и реализация программного обеспечения для обнаружения и распознавания лиц с использованием RGBD камеры»**

**(Шифр ПО «DeepFR»)**

**Н. Новгород**

**2019**

RGBD face recognition

<http://www.bmva.org/bmvc/2016/papers/paper123/paper123.pdf> (2016) - (mostly suitable for us)

1) Depth images recovery for good depth information.

2) CNN for face recognition on RGB

3) CNN for face recognition on depth (CNN for RGB images is fune-tuned with depth information).

4) Accumulated results from RGB and Depth networks and sent to the joint classifier.

<https://ieeexplore.ieee.org/document/7791199> (2016) (Interesting: depth is used only in training stage and then part of face recongitnion network becomes network with depth reconstruction for every face image, very simple, but the topic isn't discovered deeply.)

<https://arxiv.org/pdf/1805.00406.pdf> (2018) Face Recognition only on depth data. Pros: depth images are normalized first in relation to expression and rotation resulting in higher-precision complete facial depth images.

May be we can use this alongside with RGB Face recognition network feature vectors? Need to think about classifier then.

<https://www.researchgate.net/publication/333666660_Deep_Learning_from_3DLBP_Descriptors_for_Depth_Image_Based_Face_Recognition> (2019) Face Recognition on raw depth data, the network is not so deep ?? (I don't understand carefully this approach)

<https://www.sciencedirect.com/science/article/pii/S1047320318300294> (2018)

Classic machine learning for RGBD face recognition