1. Co to jest spoofing
2. Rodzaje spoofingu:

2D:

- print attack: photo/poster/A4

- paper cut: paper mask in different positions

- replay (video) attack: PC/Pad/Phone

3D:

- mask 3d

1. Techniki anty-spoofingu

- sensor based (hardware based) - eg. infrared sensors (iphone FaceID)

- features based (texture analysis - analyze color-texture information from the luminance and the chrominance channels)

- score based (machine learning)

- faze liveness detection (motion analysis)

1. Dataset

- 625,537 images

- 10,177 subjects

- 43 attributes:

- 40 face attributes: skin, nose, eyes, eyebrows, lip, hair, hat, eyeglass

- 3 spoofing attributes: spoof types, environments, ilumination conditions:

- Indoor/ Outdoor

- Normal/Strong/Back/Dark

- Five Angles

- Four shapes: ''normal'', ''inside'', ''outside'' and ''corner''

- Four Sensors: 24 popular devices with four types, ''PC'', ''camera'', ''tablet'' and ''phone''

1. Model

- CNN / SVM

1. Testowanie, zmiana parametrów modelu, metryki dokładności