

IMAGE PROCESSING AND SECURITY

VIDEO AND IMAGE ANALYSIS

ASSIGNMENTS

- ▶ DARPA Video and Image Data Analysis for find useful information in order to evaluate the accuracy of the LESC result
 - ▶ Tasks:
 - ▶ MFC18_EvalPart1_TestOnImage_TrainOnImage
 - ▶ MFC18_EvalPart1_TestOnVideo_TrainOnImage
 - ▶ MFC18_EvalPart1_TestOnVideo_TrainOnVideo
 - ▶ MFC18_Eval_GAN_Image_Crop
 - ▶ MFC18_Eval_GAN_Video_Ver3

GOAL

- ▶ Analysis
 - ▶ Counting
 - ▶ Recurrence operations
 - ▶ Probe that we haven't your history (History not found)
- ▶ Filter1
 - ▶ Found for each probe the more frequently operations and study your position
- ▶ Filter2
 - ▶ Found for each probe the more frequently previous operations on the more frequently operations

MFC18_EVALPART1_TESTONIMAGE_TRAINONIMAGE

- ▶ Analisi dello score tramite Soglia e OptOut (1/3)
 - ▶ Numero di ProbelD nel CSV score: 5275
 - ▶ Numero di ProbelD nel JSON contente le probe history: 1164
 - ▶ Numero di ProbelD che matchano nel JSON contente le probe history e che possono essere analizzate: 1469
 - ▶ Numero di ProbelD non trovati nel JSON contente le probe history: 3806

MFC18_EVALPART1_TESTONIMAGE_TRAINONIMAGE

► Analisi dello score tramite Soglia e OptOut (2/3) – Recurrence –

SCORE = -1

OutputPng	201
PasteSplice	176
AntiForensicExifQuantizationTable	150
PasteSampled	89
Blur	62
ContentAwareFill	56
Hue	55
Levels	50
DigitalPenDraw	50
OutputCopy	46
SocialMedia	46
Saturation	43
Exposure	37
ColorBalance	37

► # Probe = 238

SCORE < 50

OutputPng	836
AntiForensicExifQuantizationTable	600
PasteSplice	563
PasteSampled	398
SocialMedia	301
Blur	251
ContentAwareFill	223
OutputCopy	185
Levels	156
Saturation	117
SelectRemove	112
AddCamFingerprintPRNU	106
Exposure	100
Hue	94

► # Probe = 1060

SCORE > 50

OutputPng	156
PasteSplice	134
AntiForensicExifQuantizationTable	127
PasteSampled	71
Blur	66
Levels	57
OutputCopy	48
AddCamFingerprintPRNU	36
Contrast	22
RemoveCamFingerprintPRNU	21
CGIFill	18
SelectRemove	18
TransformResize	18
SocialMedia	17

► # Probe = 171

MFC18_EVALPART1_TESTONIMAGE_TRAINONIMAGE

- Analisi dello score tramite Soglia e OptOut (3/3) – NOJSON –

PROBE	CAMERA	SCORE	MANIP	FORMATO
75124de734fb7a0d302c57524bbd8c29	PAR-1476_primary_image	32.09	N	jpg
b5c7a2027c306ac992fe875cc565f4c3	PAR-1476_primary_image	52167.79	N	jpg
fc90ed31f90837bc97476498c27b6867	PAR-1476_primary_image	30.47	N	jpg
e459bab5e3de16cd8b1977714cbc10b2	PAR-1476_primary_image	38152.22	N	jpg
3b0114e59350c87c7a369c57e1078fb7	PAR-1476_primary_image	4902.27	N	jpg
a43eeb332ad530dddb208641e836618a	PAR-1476_primary_image	42447.26	N	jpg
fd3300157643cd92d89a24c4962e6aff	PAR-1476_primary_image	33.49	N	jpg
354861875d81556ebe0b73acc732cf5c	PAR-1476_primary_image	30.07	N	jpg
...

- Numero elementi totali non trovati nel file JSON: **3806**
 - numero elementi non trovati nel file JSON con score uguale al valore optout -1: **428**
avente inoltre formato jpg **213**
 - numero elementi non trovati nel file JSON con score maggiore o uguale del valore soglia 50: **923** ,
avente inoltre formato jpg **921**
 - numero elementi non trovati nel file JSON con score minore del valore soglia 50: **2455** ,
avente inoltre formato jpg **2328**

MFC18_EVALPART1_TESTONIMAGE_TRAINONIMAGE

► Filtro1 (Score = -1)

OUTPUTPNG

PROBE	CAMERA	N°	N°TOT
0771829cb272627e64915ed97176c6de	5000810_primary_image	1	7
4bee3dfad325ce661c528f11b3d22627	5000810_primary_image	1	7
b95eb13d255423780291f3f7de12cf40	5000810_primary_image	1	5
4c507f1f6b995f43054b37c8942755d6	5000810_primary_image	1	7
7a4fff75bb0b88c8ef5249ad86a11edb	5000810_primary_image	1	7
296009c6c856b9d0342ad1d8f79d707c	5000810_primary_image	1	5
210a3ade9566ffb1effc41d8b1bdaa51	5000810_primary_image	1	5
5662c34b5f9ca9d641319dd219d5cc0b	5000810_primary_image	1	5
a2cab06cbd2bdbcbbb23fb73db37ab0a	5000810_primary_image	1	5
...

PASTESPLICE

PROBE	CAMERA	N°	N°TOT
a2cab06cbd2bdbcbbb23fb73db37ab0a	5000810_primary_image	2	5
8ae1bfc8f96cf4a460f4ad28c5d5a0b1	5000810_primary_image	2	7
84d1659071ea6e18cf04f33760b5ac35	5000810_primary_image	2	5
0fd94a3c7880b7400c4c5d6dc128d045	5000810_primary_image	2	7
320baa612525c714f8490304a9fb165e	5000810_primary_image	2	5
07e017d70aee767e1b54e83117a447ee	5000810_primary_image	2	7
52fae74fb9884bf67717d0d1924da304	5000810_primary_image	2	5
b144ddd98e0df3fcd9d917ecef3d341	5000810_primary_image	2	7
fab1c8b086910466fd35aa37b892337c	5000810_primary_image	3	5
...

ANTIFORENSICEXIFQUANTIZATIO

PROBE	CAMERA	N°	N°TOT
4bee3dfad325ce661c528f11b3d22627	5000810_primary_image	7	7
b95eb13d255423780291f3f7de12cf40	5000810_primary_image	5	5
4c507f1f6b995f43054b37c8942755d6	5000810_primary_image	7	7
210a3ade9566ffb1effc41d8b1bdaa51	5000810_primary_image	5	5
c937b9ad482ad6e7f408f463bb62b2de	5000810_primary_image	7	7
a2cab06cbd2bdbcbbb23fb73db37ab0a	5000810_primary_image	5	5
8ae1bfc8f96cf4a460f4ad28c5d5a0b1	5000810_primary_image	7	7
84d1659071ea6e18cf04f33760b5ac35	5000810_primary_image	5	5
07e017d70aee767e1b54e83117a447ee	5000810_primary_image	7	7
...

- N° TOT**

[illegible]

- N° TOT**

[illegible]

► Filtro1 (Score = -1) – AntiForensicExifQuantizationTable–

MFC18_EVALPART1_TESTONIMAGE_TRAINONIMAGE

► Filtro1 (Score < 50)

OUTPUTPNG

PROBE	CAMERA	N	N°TO
a2cab06cbd2bdbcbbb23fb73db37a	5000810_primary_imag	2	5
8ae1bfc8f96cf4a460f4ad28c5d5a0b	5000810_primary_imag	2	7
84d1659071ea6e18cf04f33760b5ac	5000810_primary_imag	2	5
0fd94a3c7880b7400c4c5d6dc128d0	5000810_primary_imag	2	7
320baa612525c714f8490304a9fb16	5000810_primary_imag	2	5
07e017d70aee767e1b54e83117a44	5000810_primary_imag	2	7
52fae74fb9884bf67717d0d1924da3	5000810_primary_imag	2	5
b144ddd98e0df3fcdd9d917ecef3d3	5000810_primary_imag	2	7
fab1c8b086910466fd35aa37b89233	5000810_primary_imag	3	5
...

ANTIFORENSICEXIFQUANTIZATIO

PROBE	CAMERA	N	N°TO
c50027ff2b8cd867687487b9f9ffb47	PAR-1476_primary_ima	8	8
bbf5a2b6436c339ec762529d29131	PAR-1476_primary_ima	7	7
88a5914c9802a4b82583bff9d6682b	PAR-1476_primary_ima	7	7
f6f28d6936e718d39135b2e26ceb47	PAR-1476_primary_ima	4	4
fef72af7b262dd5146f9117fbaec648	PAR-1476_primary_ima	10	10
b7a1018a98fe7ea675161507cfbf1c6	PAR-1476_primary_ima	9	9
77ec7c9637d0d8eeca24121ce70498	PAR-1476_primary_ima	7	7
5d376798c6a7970bcb5266a39e097	PAR-1476_primary_ima	5	5
53af2eb87d32a21c617f0c60caa4aa5	PAR-1476_primary_ima	4	4
...

PASTESPLICE

PROBE	CAMERA	N	N°TO
78e5e08e5f14ff48d2eb85bcdaad76	PAR-1476_primary_ima	4	6
bbf5a2b6436c339ec762529d29131	PAR-1476_primary_ima	2	7
9a30d0c6415a4e92c811e93412848	PAR-1476_primary_ima	2	4
e2f0d5e96fcc94c109ee60f857e2c4c	PAR-1476_primary_ima	2	9
f38f3fa2e7ae9635c3cca58df090b6e	PAR-1476_primary_ima	2	14
b3957ec934543455c95ca96c833a2	PAR-1476_primary_ima	1	10
b7a1018a98fe7ea675161507cfbf1c6	PAR-1476_primary_ima	3	9
77ec7c9637d0d8eeca24121ce70498	PAR-1476_primary_ima	2	7
53af2eb87d32a21c617f0c60caa4aa5	PAR-1476_primary_ima	2	4
...

- N° TOT**

[illegible]

- N° TOT**

[illegible]

- N° TOT**

[illegible]

MFC18_EVALPART1_TESTONIMAGE_TRAINONIMAGE

► Filtro1 (Score > 50)

OUTPUTPNG

PROBE	CAMERA	N°	N°TOT
2e57c044dae9b2af5787ce189cc6ae	PAR-1476_primary_ima	9	10
7fed87493cd01ddce79c40239067f4	PAR-1476_primary_ima	1	7
b672d4011961c4f3192808aef8cd2c	PAR-1476_primary_ima	1	7
86d19c8a8a5351ec0d941cc168c69e	PAR-1476_primary_ima	9	10
cf7aa84e9a53b7d2b5c82a3409a078	PAR-1476_primary_ima	1	7
821f23d080992f3c4d4101f169f5cdb	PAR-1476_primary_ima	9	10
5026b9dbf37c764760e1b5a1fc7f65	PAR-1476_primary_ima	1	7
845ea69a45bf12a1d98044899c6c4e	PAR-1476_primary_ima	9	10
c229e4866f1b6003a3a853531c3219	PAR-1476_primary_ima	1	5
...

PASTESPLICE

PROBE	CAMERA	N	N°TO
2e57c044dae9b2af5787ce189cc6ae	PAR-1476_primary_ima	1	10
7fed87493cd01ddce79c40239067f4	PAR-1476_primary_ima	2	7
b672d4011961c4f3192808aef8cd2c	PAR-1476_primary_ima	2	7
86d19c8a8a5351ec0d941cc168c69e	PAR-1476_primary_ima	1	10
cf7aa84e9a53b7d2b5c82a3409a078	PAR-1476_primary_ima	2	7
821f23d080992f3c4d4101f169f5cdb	PAR-1476_primary_ima	1	10
5026b9dbf37c764760e1b5a1fc7f65	PAR-1476_primary_ima	2	7
845ea69a45bf12a1d98044899c6c4e	PAR-1476_primary_ima	1	10
c26c1e23bd91189bfe199a8502057	PAR-1476_primary_ima	3	8
...

ANTIFORENSICEXIFQUANTIZATIO

PROBE	CAMERA	N°	N°TOT
2e57c044dae9b2af5787ce189cc6ae	PAR-1476_primary_ima	10	10
7fed87493cd01ddce79c40239067f4	PAR-1476_primary_ima	7	7
cf7aa84e9a53b7d2b5c82a3409a078	PAR-1476_primary_ima	7	7
845ea69a45bf12a1d98044899c6c4e	PAR-1476_primary_ima	10	10
c26c1e23bd91189bfe199a8502057	PAR-1476_primary_ima	8	8
75a715374bd7c365f6cd71b8057ba	PAR-1476_primary_ima	7	7
9a7e809ea17a97e6db82d8b23c5d5	PAR-1476_primary_ima	8	8
b6c4c2abd01e5eeca159cdd51623b	PAR-1476_primary_ima	8	8
6c541d8a7e0fdbbe398bcacebe93166	PAR-1476_primary_ima	8	8
...

- N° TOT**

[illegible]

- N° TOT**

[illegible]

- N° TOT**

[illegible]

MFC18_EVALPART1_TESTONIMAGE_TRAINONIMAGE

► Filtro2 (Score = -1)

OUTPUTPNG

OPERATION	# PRECEDENTI
FirstOperation	162
DigitalPenDraw	11
Levels	9
AddCamFingerprintPRNU	7
SelectRemove	4
LayerOpacity	2
TransformResize	2
PasteSplice	2
TransformFlip	1
AntiForensicDither	1

► # Operations = 201

PASTESPLICE

OPERATION	# PRECEDENTI
OutputPng	87
FirstOperation	23
ContentAwareFill	23
PasteSampled	14
ArtificialShadow	9
LayerOpacity	6
Saturation	4
DigitalPenDraw	3
RemoveCamFingerprintPRNU	3
CGIFill	1
Levels	1
Blur	1
AntiForensicDither	1

► # Operations = 176

ANTIFORENSICEXIFQUANTIZATIONTABLE

OPERATION	# PRECEDENTI
AddCamFingerprintPRNU	17
PasteSampled	16
OutputPng	14
Hue	11
PasteSplice	10
Levels	7
TransformResize	6
ContentAwareFill	6
Exposure	6
TransformWarp	6
Blur	5
TransformSkew	5
SelectRemove	5
...	...

► # Operations = 150

MFC18_EVALPART1_TESTONIMAGE_TRAINONIMAGE

► Filtro2 (Score < 50)

OUTPUTPNG

OPERATION	# PRECEDENTI
FirstOperation	743
AddCamFingerprintPRNU	13
PasteSplice	10
PasteSampled	9
Sharpening	7
SelectRemove	6
DigitalPenDraw	6
Blur	6
ForensicExifQuantizationTi	5
TransformResize	5
ArtificialShadow	4
Levels	4
...	...

► # Operations = 836

ANTIFORENSICEXIFQUANTIZATIONTABLE

OPERATION	# PRECEDENTI
PasteSampled	99
AddCamFingerprintPRNU	85
Blur	45
PasteSplice	38
ContentAwareFill	28
Levels	26
AddNoise	23
OverlayText	21
OutputPng	19
Contrast	18
SelectRemove	18
Exposure	17
Saturation	16
...	...

► # Operations = 600

PASTESPLICE

OPERATION	# PRECEDENTI
OutputPng	387
FirstOperation	26
ContentAwareFill	24
RemoveCamFingerprintPRNU	14
AntiForensicDither	13
LensDistortion	13
PasteSampled	11
OverlayObject	8
TransformContentAwareScale	8
CGIFill	7
OverlayText	6
AddNoise	6
...	...

► # Operations = 563

MFC18_EVALPART1_TESTONIMAGE_TRAINONIMAGE

► Filtro2 (Score > 50)

OUTPUTPNG

OPERATION	# PRECEDENTI
FirstOperation	133
SelectRemove	4
LayerOpacity	4
AddCamFingerprintPRNU	4
PasteSplice	4
CGIFill	3
PasteSampled	2
ArtificialShadow	1
Levels	1

PASTESPLICE

OPERATION	# PRECEDENTI
OutputPng	80
Sharpening	8
CGIFill	7
LensDistortion	7
PasteSampled	6
AntiForensicDither	5
FirstOperation	5
Levels	4
OverlayText	4
RemoveCamFingerprintPRNU	3
DigitalPenDraw	1
ContentAwareFill	1
Curves	1
OverlayObject	1
ColorLUT	1

ANTIFORENSICEXIFQUANTIZATIONTABLE

OPERATION	# PRECEDENTI
AddCamFingerprintPRNU	31
PasteSampled	15
Blur	12
Levels	12
PasteSplice	10
OutputPng	6
AddNoise	5
OverlayText	5
OverlayObject	3
SelectRemove	3
Saturation	3
Contrast	3
TransformFlip	2
...	...

► # Operations = 156

► # Operations = 134

► # Operations = 127

MFC18_EVALPART1_TESTONVIDEO_TRAINONIMAGE

- ▶ Analisi dello score tramite Soglia e OptOut (1/3)
 - ▶ Numero di ProbeID nel CSV score: 289
 - ▶ Numero di ProbeID nel JSON contente le probe history: 195
 - ▶ Numero di ProbeID che matchano nel JSON contente le probe history e che possono essere analizzate: 217
 - ▶ Numero di ProbeID non trovati nel JSON contente le probe history: 72

MFC18_EVALPART1_TESTONVIDEO_TRAINONIMAGE

► Analisi dello score tramite Soglia e OptOut (1/3) – Recurrence –

SCORE = -1

AntiForensicCopyExif	20
OutputAVI	19
SelectCutFrames	9
TimeAlterationWarp	8
CopyPaste	7
SocialMedia	3
PasteSampled	3
AddAudioSample	3
DeleteAudioSample	2
AddCamFingerprintPRNU	2
PasteImageSpliceToFrames	2
RemoveCamFingerprintPRNU	2
ObjectCGI	2
AddNoise	2

► # Probe = 24

SCORE < 50

OutputAVI	95
AntiForensicCopyExif	88
SelectCutFrames	38
TimeAlterationWarp	38
SocialMedia	27
CopyPaste	27
AddAudioSample	21
PasteSampled	19
PasteOverlay	17
RemoveCamFingerprintPRNU	9
ObjectCGI	9
AntiForensicEditExif	9
TransformDownSample	8
ColorBalance	7

► # Probe = 119

SCORE > 50

AntiForensicCopyExif	51
OutputAVI	50
SelectCutFrames	25
TimeAlterationWarp	21
SocialMedia	18
PasteSampled	17
AddAudioSample	16
CopyPaste	12
PasteOverlay	9
AntiForensicEditExif	9
OutputCopy	6
ColorBalance	5
ObjectCGI	4
RemoveCamFingerprintPRNU	4

► # Probe = 74

MFC18_EVALPART1_TESTONVIDEO_TRAINONIMAGE

- ▶ Analisi dello score tramite Soglia e OptOut (3/3) – NOJSON –

PROBE	CAMERA	SCORE	MANIP	FORMATO
70b9ac808cf1373c48b8f0d80fbd4507	ES-D5100_primary_image	-1	N	mts
746c538433f1d9a508b0bb2902bb938b	ES-D5100_primary_image	153.29	N	mp4
7ba8341bf78f3e656f9ff5dab231fc54	ES-D5100_primary_image	114.39	N	mp4
5e562dd89dd28144fb0424cb23341d8b	ES-D5100_primary_image	107.77	N	mp4
80477616336656ef2af661a79676a55a	ES-D5100_primary_image	159.1	N	mp4
95ce8ffcc7dff02040495389332085aa	ES-D5100_primary_image	112.21	N	mp4
920d93f8255595cd558e5b8263717de5	ES-D5100_primary_image	104.69	N	mov
fe26257f88a52f481f78479069203645	PAR-1579_primary_image	49.28	N	mp4
...

- ▶ Numero elementi totali non trovati nel file JSON: 72
 - ▶ numero elementi non trovati nel file JSON con score uguale al valore optout -1: 11 , avente inoltre formato mts 2
 - ▶ numero elementi non trovati nel file JSON con score maggiore o uguale del valore soglia 50: 20 , avente inoltre formato mts 0
 - ▶ numero elementi non trovati nel file JSON con score minore del valore soglia 50: 41 , avente inoltre formato mts 0

MFC18_EVALPART1_TESTONVIDEO_TRAINONIMAGE

► Filtro1 (Score = -1)

ANTIFORENSICCOPYEXIF

PROBE	CAMERA	N°	N°TOT
11c94a7b93e2b5bed70d61da17762390	ES-D5100_primary_image	12	12
42cc7e5d50ebce6ed2dabd89ab3c6b9e	MK-NEX5T_primary_image	5	5
a27879234d42f2ecd360fc69a702a1f1	MK-NEX5T_primary_image	4	4
a9b5901bf590a8aac3a2150d226e5972	MK-NEX5T_primary_image	4	4
26fe7dc24deec7868a6bd60e5aca9e51	MK-NEX5T_primary_image	3	3
21359f7478be481e6f2ec0ce2a2f7656	MK-NEX5T_primary_image	3	3
26fe7dc24deec7868a6bd60e5aca9e51	PAR-1477_primary_image	3	3
45042cf888408680c0b688fb2639b930	5000810_primary_image	3	3
...

N° TOT

	1	2	3	4	5	6	7	8	9	10	11	12
1	-	-	-	-	-	-	-	-	-	-	-	-
2	-	2	-	-	-	-	-	-	-	-	-	-
3	-	-	8	-	-	-	-	-	-	-	-	-
4	-	-	-	4	-	-	-	-	-	-	-	-
5	-	-	-	-	4	-	-	-	-	-	-	-
6	-	-	-	-	-	-	-	-	-	-	-	-
7	-	-	-	-	-	-	-	-	-	-	-	-
8	-	-	-	-	-	-	-	-	-	-	-	-
9	-	-	-	-	-	-	-	-	1	-	-	-
10	-	-	-	-	-	-	-	-	-	-	-	-
11	-	-	-	-	-	-	-	-	-	-	-	-
12	-	-	-	-	-	-	-	-	-	-	-	1

N°

OUTPUTAVI

PROBE	CAMERA	N°	N°TOT
11c94a7b93e2b5bed70d61da17762390	ES-D5100_primary_image	9	12
42cc7e5d50ebce6ed2dabd89ab3c6b9e	MK-NEX5T_primary_image	1	5
a27879234d42f2ecd360fc69a702a1f1	MK-NEX5T_primary_image	1	4
a9b5901bf590a8aac3a2150d226e5972	MK-NEX5T_primary_image	1	4
26fe7dc24deec7868a6bd60e5aca9e51	MK-NEX5T_primary_image	1	3
21359f7478be481e6f2ec0ce2a2f7656	MK-NEX5T_primary_image	1	3
26fe7dc24deec7868a6bd60e5aca9e51	PAR-1477_primary_image	1	3
45042cf888408680c0b688fb2639b930	5000810_primary_image	1	3
...

N° TOT

	1	2	3	4	5	6	7	8	9	10	11	12
1	-	-	8	5	4	-	-	-	1	-	-	-
2	-	-	-	-	-	-	-	-	-	-	-	-
3	-	-	-	-	-	-	-	-	-	-	-	-
4	-	-	-	-	-	-	-	-	-	-	-	-
5	-	-	-	-	-	-	-	-	-	-	-	-
6	-	-	-	-	-	-	-	-	-	-	-	-
7	-	-	-	-	-	-	-	-	-	-	-	-
8	-	-	-	-	-	-	-	-	-	-	-	-
9	-	-	-	-	-	-	-	-	-	-	-	1
10	-	-	-	-	-	-	-	-	-	-	-	-
11	-	-	-	-	-	-	-	-	-	-	-	-
12	-	-	-	-	-	-	-	-	-	-	-	-

N°

SELECTCUTFRAMES

PROBE	CAMERA	N°	N°TOT
42cc7e5d50ebce6ed2dabd89ab3c6b9e	MK-NEX5T_primary_image	2	5
a27879234d42f2ecd360fc69a702a1f1	MK-NEX5T_primary_image	2	4
26fe7dc24deec7868a6bd60e5aca9e51	MK-NEX5T_primary_image	2	3
26fe7dc24deec7868a6bd60e5aca9e51	PAR-1477_primary_image	2	3
45042cf888408680c0b688fb2639b930	5000810_primary_image	2	3
a27879234d42f2ecd360fc69a702a1f1	5000810_primary_image	2	4
42cc7e5d50ebce6ed2dabd89ab3c6b9e	5000810_primary_image	2	5
363fd333bddd3de69e56448d800eddf4	5000810_primary_image	2	5
c084344b309454261eae9d2e52cd3b70	5000810_primary_image	2	5

N° TOT

	1	2	3	4	5
1	-	-	-	-	-
2	-	-	3	2	4
3	-	-	-	-	-
4	-	-	-	-	-
5	-	-	-	-	-

N°

MFC18_EVALPART1_TESTONVIDEO_TRAINONIMAGE

► Filtro1 (Score < 50)

OUTPUTAVI

PROBE	CAMERA	N°	N°TOT
4f746fa223c74ca0e63125f51f1b606e	PAR-1579_primary_image	1	4
f02be41241b56cabcf18791af662efb5	PAR-1579_primary_image	1	3
3aafe09bacf1b75e1672e9980b6a1c2e	PAR-1579_primary_image	1	5
20df2f8111d13826b958725c9e0ae40b	PAR-1579_primary_image	1	5
9290bc58e85305a03ed72458ae261691	PAR-1579_primary_image	1	3
1c680f71c185f26f7f9b30e02e71034e	PAR-1579_primary_image	1	4
1b6555ceee532069a2040900987e3437	PAR-1579_primary_image	1	3
a95314d44b50f88b43e1c4ad288a6d42	PAR-1579_primary_image	1	3
...

N°	N° TOT							
	1	2	3	4	5	6	7	
	1	-	-	26	34	25	4	6
	2	-	-	-	-	-	-	-
	3	-	-	-	-	-	-	-
	4	-	-	-	-	-	-	-
	5	-	-	-	-	-	-	-
	6	-	-	-	-	-	-	-
	7	-	-	-	-	-	-	-

ANTIFORENSICCOPYEXIF

PROBE	CAMERA	N°	N°TOT
4f746fa223c74ca0e63125f51f1b606e	PAR-1579_primary_image	4	4
f02be41241b56cabcf18791af662efb5	PAR-1579_primary_image	3	3
3aafe09bacf1b75e1672e9980b6a1c2e	PAR-1579_primary_image	4	5
20df2f8111d13826b958725c9e0ae40b	PAR-1579_primary_image	4	5
9290bc58e85305a03ed72458ae261691	PAR-1579_primary_image	3	3
1c680f71c185f26f7f9b30e02e71034e	PAR-1579_primary_image	4	4
1b6555ceee532069a2040900987e3437	PAR-1579_primary_image	3	3
a95314d44b50f88b43e1c4ad288a6d42	PAR-1579_primary_image	3	3
...

N°	N° TOT						
	1	2	3	4	5	6	7
	1	-	-	-	-	-	-
	2	-	9	-	-	-	-
	3	-	-	24	4	-	-
	4	-	-	-	27	6	-
	5	-	-	-	-	13	2
	6	-	-	-	-	-	-
	7	-	-	-	-	-	3

SELECTCUTFRAMES

PROBE	CAMERA	N°	N°TOT
1c680f71c185f26f7f9b30e02e71034e	PAR-1579_primary_image	2	4
1b6555ceee532069a2040900987e3437	PAR-1579_primary_image	2	3
b7c7a74571e87bce9d485394e5b34401	PAR-1579_primary_image	2	4
83019965991a1a9984d7c7bff392122b	PAR-1579_primary_image	2	4
80a13f08653249baaba174a34b09f7ea	PAR-1579_primary_image	2	5
6e546b9da1742556be0ff41a5be903d9	PAR-1579_primary_image	2	5
f2216a894706616e5ea3f4185727d896	MK-NEX5T_primary_image	2	6
267bc13fca4bc1cbd8fecb803af870f6	PAR-1477_primary_image	2	6
...

N°	N° TOT						
	1	2	3	4	5	6	
	1	-	-	-	-	-	
	2	-	-	9	11	14	2
	3	-	-	-	-	-	2
	4	-	-	-	-	-	-
	5	-	-	-	-	-	-
	6	-	-	-	-	-	-

MFC18_EVALPART1_TESTONVIDEO_TRAINONIMAGE

► Filtro1 (Score > 50)

ANTIFORENSICCOPYEXIF

PROBE	CAMERA	N°	N°TOT
75ed2ccf33845a44f0590c9482cf1ca3	ES-D5100_primary_image	3	3
7199d714a3e9f54c6b070ddbe364d4c3	ES-D5100_primary_image	4	4
f8d2ed5d34124e8ad3bd4d4a1d108184	ES-D5100_primary_image	4	4
9fc9a7459f21b23f09f49dbe5e3a0663	ES-D5100_primary_image	4	4
1dcbd3d40a8c63a30ed226c2e38dbfd4	ES-D5100_primary_image	4	4
0679b7e6a1688ff412e18bdebe246442	ES-D5100_primary_image	4	4
1c20c5778d792d5803de04662e359ccc	ES-D5100_primary_image	4	4
2bfe7d6a032e7460add10311a04d01cb	ES-D5100_primary_image	3	3
...

N°	N° TOT					
	1	2	3	4	5	6
	1	-	-	-	-	-
	2	-	8	-	-	-
	3	-	-	11	5	-
	4	-	-	-	14	2
	5	-	-	-	-	7
	6	-	-	-	-	-

OUTPUTAVI

PROBE	CAMERA	N°	N°TOT
75ed2ccf33845a44f0590c9482cf1ca3	ES-D5100_primary_image	1	3
7199d714a3e9f54c6b070ddbe364d4c3	ES-D5100_primary_image	1	4
f8d2ed5d34124e8ad3bd4d4a1d108184	ES-D5100_primary_image	1	4
83db8eb578ee88537e851c3c17a4de5c	ES-D5100_primary_image	1	7
9fc9a7459f21b23f09f49dbe5e3a0663	ES-D5100_primary_image	1	4
1dcbd3d40a8c63a30ed226c2e38dbfd4	ES-D5100_primary_image	1	4
0679b7e6a1688ff412e18bdebe246442	ES-D5100_primary_image	1	4
1c20c5778d792d5803de04662e359ccc	ES-D5100_primary_image	1	4
...

N°	N° TOT						
	1	2	3	4	5	6	7
	1	-	-	11	19	10	6
	2	-	-	-	-	-	-
	3	-	-	-	-	-	-
	4	-	-	-	-	-	-
	5	-	-	-	-	-	-
	6	-	-	-	-	-	-
	7	-	-	-	-	-	-

SELECTCUTFRAMES

PROBE	CAMERA	N°	N°TOT
7199d714a3e9f54c6b070ddbe364d4c3	ES-D5100_primary_image	2	4
1dcbd3d40a8c63a30ed226c2e38dbfd4	ES-D5100_primary_image	2	4
0679b7e6a1688ff412e18bdebe246442	ES-D5100_primary_image	2	4
1c20c5778d792d5803de04662e359ccc	ES-D5100_primary_image	2	4
2bfe7d6a032e7460add10311a04d01cb	ES-D5100_primary_image	2	3
80a13f08653249baaba174a34b09f7ea	ES-D5100_primary_image	2	5
b44d7dfd0d1cef2f13e15296d0f073d8	ES-D5100_primary_image	2	4
b073e8576f15867fe8e7a691985271ad	ES-D5100_primary_image	2	3
...

N°	N° TOT					
	1	2	3	4	5	6
	1	-	-	-	-	-
	2	-	-	5	9	6
	3	-	-	-	1	2
	4	-	-	-	-	-
	5	-	-	-	-	-
	6	-	-	-	-	-

MFC18_EVALPART1_TESTONVIDEO_TRAINONIMAGE

► Filtro2 (Score = -1)

ANTIFORENSICCOPYEXIF

OPERATION	# PRECEDENTI
CopyPaste	5
TimeAlterationWarp	4
SelectCutFrames	3
RemoveCamFingerprintPRNU	2
AddCamFingerprintPRNU	2
Saturation	1
AddAudioSample	1
Sharpening	1
PasteSampled	1

► # Operations = 20

OUTPUTAVI

OPERATION	# PRECEDENTI
FirstOperation	18
DeleteAudioSample	1

► # Operations = 19

SELECTCUTFRAMES

OPERATION	# PRECEDENTI
OutputAVI	9

► # Operations = 9

MFC18_EVALPART1_TESTONVIDEO_TRAINONIMAGE

► Filtro2 (Score < 50)

OUTPUTAVI

OPERATION	# PRECEDENTI
FirstOperation	95

ANTIFORENSICCOPYEXIF

OPERATION	# PRECEDENTI
TimeAlterationWarp	26
CopyPaste	13
SelectCutFrames	11
PasteSampled	10
RemoveCamFingerprintPRNU	9
ObjectCGI	4
AddAudioSample	3
AddCamFingerprintPRNU	3
OverlayObject	3
PasteOverlay	2
Hue	1
Sharpening	1
ReduceInterlaceFlicker	1
TransformCrop	1

SELECTCUTFRAMES

OPERATION	# PRECEDENTI
OutputAVI	36
TransformDownSample	2

► # Operations = 95

► # Operations = 88

► # Operations = 38

MFC18_EVALPART1_TESTONVIDEO_TRAINONIMAGE

► Filtro2 (Score > 50)

ANTIFORENSICCOPYEXIF

OPERATION	# PRECEDENTI
TimeAlterationWarp	15
PasteSampled	9
SelectCutFrames	7
CopyPaste	6
RemoveCamFingerprintPRNU	4
OverlayObject	2
AddCamFingerprintPRNU	2
AddTransitions	1
AddAudioSample	1
Sharpening	1
Hue	1
ObjectCGI	1
TransformCrop	1

► # Operations = 51

OUTPUTAVI

OPERATION	# PRECEDENTI
FirstOperation	50

► # Operations = 50

SELECTCUTFRAMES

OPERATION	# PRECEDENTI
OutputAVI	22
TransformDownSample	2
WarpStabilize	1

► # Operations = 25

MFC18_EVALPART1_TESTONVIDEO_TRAINONVIDEO

- ▶ Analisi dello score tramite Soglia e OptOut (1/3)
 - ▶ Numero di ProbelD nel CSV score: 289
 - ▶ Numero di ProbelD nel JSON contente le probe history: 195
 - ▶ Numero di ProbelD che matchano nel JSON contente le probe history e che possono essere analizzate: 217
 - ▶ Numero di ProbelD non trovati nel JSON contente le probe history: 72

MFC18_EVALPART1_TESTONVIDEO_TRAINONVIDEO

► Analisi dello score tramite Soglia e OptOut (2/3) – Recurrence –

SCORE = -1

OutputAVI	125
AntiForensicCopyExif	120
SelectCutFrames	52
TimeAlterationWarp	46
SocialMedia	41
PasteSampled	36
CopyPaste	33
AddAudioSample	32
PasteOverlay	23
ObjectCGI	15
AntiForensicEditExif	15
OutputCopy	14
RemoveCamFingerprintPRNU	13
ColorBalance	12
OutputAVI	125
AntiForensicCopyExif	120

► # Probe = 171

SCORE < 50

AntiForensicCopyExif	22
OutputAVI	21
SelectCutFrames	13
TimeAlterationWarp	13
AddAudioSample	8
SocialMedia	6
CopyPaste	5
AntiForensicEditExif	3
AudioReverb	2
AudioSample	2
PasteOverlay	1
AddCamFingerprintPRNU	1
PasteSampled	1
RemoveCamFingerprintPRNU	1
AntiForensicCopyExif	22
OutputAVI	21

► # Probe = 28

SCORE > 50

OutputAVI	18
AntiForensicCopyExif	17
CopyPaste	8
TimeAlterationWarp	8
SelectCutFrames	7
PasteOverlay	2
PasteSampled	2
Saturation	1
ReduceInterlaceFlicker	1
OverlayObject	1
OutputMP4	1
Mosaic	1
RemoveCamFingerprintPRNU	1
PasteImageSpliceToFrames	1
SocialMedia	1
ColorBalance	1
Hue	1

► # Probe = 18

MFC18_EVALPART1_TESTONVIDEO_TRAINONVIDEO

► Analisi dello score tramite Soglia e OptOut (3/3) - NOJSON -

70b9ac808cf1373c48b8f0d80fbd4507	ES-D5100_primary_video	-1.00	N	mts
746c538433f1d9a508b0bb2902bb938b	ES-D5100_primary_video	25.26	N	mp4
7ba8341bf78f3e656f9ff5dab231fc54	ES-D5100_primary_video	12024.33	N	mp4
5e562dd89dd28144fb0424cb23341d8b	ES-D5100_primary_video	25.46	N	mp4
80477616336656ef2af661a79676a55a	ES-D5100_primary_video	28.04	N	mp4
95ce8ffcc7dff02040495389332085aa	ES-D5100_primary_video	-1.00	N	mp4
920d93f8255595cd558e5b8263717de5	ES-D5100_primary_video	14714.95	N	mov
fe26257f88a52f481f78479069203645	PAR-1579_primary_video	72.60	N	mp4
0a1f229e64a42c685d347fda749b7fbf	PAR-1579_primary_video	-1.00	N	mp4
...

► Numero elementi totali non trovati nel file JSON: 72

- numero elementi non trovati nel file JSON con score uguale al valore optout -1: 57 , avente inoltre formato mts 2
- numero elementi non trovati nel file JSON con score maggiore o uguale del valore soglia 50: 4 , avente inoltre formato mts 0
- numero elementi non trovati nel file JSON con score minore del valore soglia 50: 11 , avente inoltre formato mts 0

MFC18_EVALPART1_TESTONVIDEO_TRAINONVIDEO

► Analisi dello score tramite Soglia e OptOut (3/3) - NOJSON -

70b9ac808cf1373c48b8f0d80fbd4507	ES-D5100_primary_video	-1.00	N	mts
746c538433f1d9a508b0bb2902bb938b	ES-D5100_primary_video	25.26	N	mp4
7ba8341bf78f3e656f9ff5dab231fc54	ES-D5100_primary_video	12024.33	N	mp4
5e562dd89dd28144fb0424cb23341d8b	ES-D5100_primary_video	25.46	N	mp4
80477616336656ef2af661a79676a55a	ES-D5100_primary_video	28.04	N	mp4
95ce8ffcc7dff02040495389332085aa	ES-D5100_primary_video	-1.00	N	mp4
920d93f8255595cd558e5b8263717de5	ES-D5100_primary_video	14714.95	N	mov
fe26257f88a52f481f78479069203645	PAR-1579_primary_video	72.60	N	mp4
0a1f229e64a42c685d347fda749b7fbf	PAR-1579_primary_video	-1.00	N	mp4
...

► Numero elementi totali non trovati nel file JSON: 72

- numero elementi non trovati nel file JSON con score uguale al valore optout -1: 57 , avente inoltre formato mts 2
- numero elementi non trovati nel file JSON con score maggiore o uguale del valore soglia 50: 4 , avente inoltre formato mts 0
- numero elementi non trovati nel file JSON con score minore del valore soglia 50: 11 , avente inoltre formato mts 0

MFC18_EVALPART1_TESTONVIDEO_TRAINONVIDEO

Filtro1 (Score = -1)

OUTPUTAVI

PROBE	CAMERA	N°	N°TOT
83db8eb578ee88537e851c3c17a4de5c	ES-D5100_primary_video	1	7
1c20c5778d792d5803de04662e359ccc	ES-D5100_primary_video	1	4
11c94a7b93e2b5bed70d61da17762390	ES-D5100_primary_video	9	12
be5ba8e769915b5a4371d37b16df76c1	ES-D5100_primary_video	1	5
3aafe09bacf1b75e1672e9980b6a1c2e	PAR-1579_primary_video	1	5
ee897023e846bd55aa99557be42128c4	PAR-1579_primary_video	1	3
64928d8d0267b49830b2ca5f6b850b5f	MK-NEX5T_primary_video	1	5
d0a6d1ea77975e7da35bfd81063fd3fe	MK-NEX5T_primary_video	1	5
...

N° TOT												
	1	2	3	4	5	6	7	8	9	10	11	12
1	0	0	32	40	33	10	8	0	1	0	0	0
2	0	0	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0	0	0	0	0	0
9	0	0	0	0	0	0	0	0	0	0	0	1
10	0	0	0	0	0	0	0	0	0	0	0	0
11	0	0	0	0	0	0	0	0	0	0	0	0
12	0	0	0	0	0	0	0	0	0	0	0	0

ANTIFORENSICCOPYEXIF

PROBE	CAMERA	N°	N°TOT
1c20c5778d792d5803de04662e359ccc	ES-D5100_primary_video	4	4
11c94a7b93e2b5bed70d61da17762390	ES-D5100_primary_video	12	12
be5ba8e769915b5a4371d37b16df76c1	ES-D5100_primary_video	5	5
3aafe09bacf1b75e1672e9980b6a1c2e	PAR-1579_primary_video	4	5
64928d8d0267b49830b2ca5f6b850b5f	MK-NEX5T_primary_video	5	5
d0a6d1ea77975e7da35bfd81063fd3fe	MK-NEX5T_primary_video	5	5
a94d40dabf90ddcff0b3afda3e02ad4	MK-NEX5T_primary_video	3	4
a4fee39a25f2355bcc987037cb144cd4	MK-NEX5T_primary_video	4	6
...

N° TOT												
	1	2	3	4	5	6	7	8	9	10	11	12
1	0	0	0	0	0	0	0	0	0	0	0	0
2	0	18	0	0	0	0	0	0	0	0	0	0
3	0	0	30	8	0	0	0	0	0	0	0	0
4	0	0	0	28	5	2	0	0	0	0	0	0
5	0	0	0	0	21	4	0	0	0	0	0	0
6	0	0	0	0	0	0	0	0	0	0	0	0
7	0	0	0	0	0	0	2	0	0	0	0	0
8	0	0	0	0	0	0	0	0	0	0	0	0
9	0	0	0	0	0	0	0	0	1	0	0	0
10	0	0	0	0	0	0	0	0	0	0	0	0
11	0	0	0	0	0	0	0	0	0	0	0	0
12	0	0	0	0	0	0	0	0	0	0	0	1

SELECTCUTFRAMES

PROBE	CAMERA	N°	N°TOT
1c20c5778d792d5803de04662e359ccc	ES-D5100_primary_video	2	4
be5ba8e769915b5a4371d37b16df76c1	ES-D5100_primary_video	3	5
d0a6d1ea77975e7da35bfd81063fd3fe	MK-NEX5T_primary_video	2	5
42cc7e5d50ebce6ed2dabd89ab3c6b9e	MK-NEX5T_primary_video	2	5
a27879234d42f2ecd360fc69a702a1f1	MK-NEX5T_primary_video	2	4
26fe7dc24deec7868a6bd60e5aca9e51	MK-NEX5T_primary_video	2	3
771a485b6b16fb8218e04986164f781d	MK-NEX5T_primary_video	2	4
fb7d68d138740670ed9f388ce1c7a341	MK-NEX5T_primary_video	2	3
...

N° TOT						
	1	2	3	4	5	6
1	0	0	0	0	0	0
2	0	0	12	12	19	4
3	0	0	0	0	1	4
4	0	0	0	0	0	0
5	0	0	0	0	0	0
6	0	0	0	0	0	0

MFC18_EVALPART1_TESTONVIDEO_TRAINONVIDEO

► Filtro1 (Score < 50)

ANTIFORENSICCOPYEXIF

PROBE	CAMERA	N°	N°TOT
75ed2ccf33845a44f0590c9482cf1ca3	ES-D5100_primary_video	3	3
7199d714a3e9f54c6b070ddbe364d4c3	ES-D5100_primary_video	4	4
f8d2ed5d34124e8ad3bd4d4a1d108184	ES-D5100_primary_video	4	4
9fc9a7459f21b23f09f49dbe5e3a0663	ES-D5100_primary_video	4	4
1dcbd3d40a8c63a30ed226c2e38dbfd4	ES-D5100_primary_video	4	4
0679b7e6a1688ff412e18bdebe246442	ES-D5100_primary_video	4	4
b073e8576f15867fe8e7a691985271ad	ES-D5100_primary_video	3	3
80a13f08653249baaba174a34b09f7ea	PAR-1579_primary_video	5	5
...

N°

	N° TOT				
	1	2	3	4	5
1	-	-	-	-	-
2	-	1	-	-	-
3	-	-	6	1	-
4	-	-	-	10	2
5	-	-	-	-	2

OUTPUTAVI

PROBE	CAMERA	N°	N°TOT
75ed2ccf33845a44f0590c9482cf1ca3	ES-D5100_primary_video	1	3
7199d714a3e9f54c6b070ddbe364d4c3	ES-D5100_primary_video	1	4
f8d2ed5d34124e8ad3bd4d4a1d108184	ES-D5100_primary_video	1	4
9fc9a7459f21b23f09f49dbe5e3a0663	ES-D5100_primary_video	1	4
1dcbd3d40a8c63a30ed226c2e38dbfd4	ES-D5100_primary_video	1	4
0679b7e6a1688ff412e18bdebe246442	ES-D5100_primary_video	1	4
b073e8576f15867fe8e7a691985271ad	ES-D5100_primary_video	1	3
80a13f08653249baaba174a34b09f7ea	PAR-1579_primary_video	1	5
...

N°

	N° TOT				
	1	2	3	4	5
1	-	-	6	11	4
2	-	-	-	-	-
3	-	-	-	-	-
4	-	-	-	-	-
5	-	-	-	-	-

SELECTCUTFRAMES

PROBE	CAMERA	N°	N°TOT
7199d714a3e9f54c6b070ddbe364d4c3	ES-D5100_primary_video	2	4
1dcbd3d40a8c63a30ed226c2e38dbfd4	ES-D5100_primary_video	2	4
0679b7e6a1688ff412e18bdebe246442	ES-D5100_primary_video	2	4
b073e8576f15867fe8e7a691985271ad	ES-D5100_primary_video	2	3
80a13f08653249baaba174a34b09f7ea	PAR-1579_primary_video	2	5
6e546b9da1742556be0ff41a5be903d9	PAR-1579_primary_video	2	5
b0a761cc3519d7dc5292af2c780d136b	PAR-1233_primary_video	2	5
c110a14b7bbdf383f9ea380363c72c6d	PAR-1233_primary_video	2	5
...

N°

	N° TOT				
	1	2	3	4	5
1	-	-	-	-	-
2	-	-	3	6	4
3	-	-	-	-	-
4	-	-	-	-	-
5	-	-	-	-	-

MFC18_EVALPART1_TESTONVIDEO_TRAINONVIDEO

► Filtro1 (Score > 50)

OUTPUTAVI

PROBE	CAMERA	N°	N°TOT
2bfe7d6a032e7460add10311a04d01cb	ES-D5100_primary_video	1	3
d7e636ba4b0c30e65353d653246ec126	ES-D5100_primary_video	1	3
80a13f08653249baaba174a34b09f7ea	ES-D5100_primary_video	1	5
0ce2fb2790997ec0e368b74d9db2ea28	ES-D5100_primary_video	1	4
b44d7dfd0d1cef2f13e15296d0f073d8	ES-D5100_primary_video	1	4
4f746fa223c74ca0e63125f51f1b606e	PAR-1579_primary_video	1	4
f02be41241b56cabcf18791af662efb5	PAR-1579_primary_video	1	3
20df2f8111d13826b958725c9e0ae40b	PAR-1579_primary_video	1	5
...

ANTIFORENSICCOPYEXIF

PROBE	CAMERA	N°	N°TOT
2bfe7d6a032e7460add10311a04d01cb	ES-D5100_primary_video	3	3
d7e636ba4b0c30e65353d653246ec126	ES-D5100_primary_video	3	3
80a13f08653249baaba174a34b09f7ea	ES-D5100_primary_video	5	5
0ce2fb2790997ec0e368b74d9db2ea28	ES-D5100_primary_video	4	4
b44d7dfd0d1cef2f13e15296d0f073d8	ES-D5100_primary_video	4	4
4f746fa223c74ca0e63125f51f1b606e	PAR-1579_primary_video	4	4
f02be41241b56cabcf18791af662efb5	PAR-1579_primary_video	3	3
20df2f8111d13826b958725c9e0ae40b	PAR-1579_primary_video	4	5
...

COPY PASTE

PROBE	CAMERA	N°	N°TOT
d7e636ba4b0c30e65353d653246ec126	ES-D5100_primary_video	2	3
0ce2fb2790997ec0e368b74d9db2ea28	ES-D5100_primary_video	2	4
4f746fa223c74ca0e63125f51f1b606e	PAR-1579_primary_video	2	4
f02be41241b56cabcf18791af662efb5	PAR-1579_primary_video	2	3
9290bc58e85305a03ed72458ae261691	PAR-1579_primary_video	2	3
a95314d44b50f88b43e1c4ad288a6d42	PAR-1579_primary_video	2	3
4ba59c9eab2caada107ec789af2fc3fe	PAR-1579_primary_video	2	4
49b1371871cc44d34bce8bae6cf6c894	PAR-1579_primary_video	2	3

N° TOT							
	1	2	3	4	5	6	7
1	-	-	7	7	2	-	2
2	-	-	-	-	-	-	-
3	-	-	-	-	-	-	-
4	-	-	-	-	-	-	-
5	-	-	-	-	-	-	-
6	-	-	-	-	-	-	-
7	-	-	-	-	-	-	-

N° TOT							
	1	2	3	4	5	6	7
1	-	-	-	-	-	-	-
2	-	-	-	-	-	-	-
3	-	-	7	-	-	-	-
4	-	-	-	7	1	-	-
5	-	-	-	-	1	-	-
6	-	-	-	-	-	-	-
7	-	-	-	-	-	-	1

N° TOT				
	1	2	3	4
1	-	-	-	-
2	-	-	5	3
3	-	-	-	-
4	-	-	-	-

MFC18_EVALPART1_TESTONVIDEO_TRAINONVIDEO

► Filtro2 (Score = -1)

OUTPUTAVI

OPERATION	# PRECEDENTI
FirstOperation	124
DeleteAudioSample	1

ANTIFORENSICCOPYEXIF

OPERATION	# PRECEDENTI
TimeAlterationWarp	27
CopyPaste	18
PasteSampled	18
SelectCutFrames	15
RemoveCamFingerprint	13
AddCamFingerprintPRN	6
ObjectCGI	5
OverlayObject	4
AddAudioSample	3
Sharpening	3
Hue	2
TransformCrop	2
Saturation	1
PasteOverlay	1
ReduceInterlaceFlicker	1
AddTransitions	1

SELECTCUTFRAMES

OPERATION	# PRECEDENTI
OutputAVI	47
TransformDownSample	4
WarpStabilize	1

► # Operations = 125

► # Operations = 120

► # Operations = 52

MFC18_EVALPART1_TESTONVIDEO_TRAINONVIDEO

► Filtro2 (Score < 50)

ANTIFORENSICCOPYEXIF

OPERATION	# PRECEDENTI
TimeAlterationWarp	11
SelectCutFrames	4
AddAudioSample	2
RemoveCamFingerprintPRNU	1
AddCamFingerprintPRNU	1
PasteSampled	1
CopyPaste	1
PasteOverlay	1

► # Operations = 22

OUTPUTAVI

OPERATION	# PRECEDENTI
FirstOperation	21

► # Operations = 21

SELECTCUTFRAMES

OPERATION	# PRECEDENTI
OutputAVI	13

► # Operations = 13

MFC18_EVALPART1_TESTONVIDEO_TRAINONVIDEO

► Filtro2 (Score > 50)

OUTPUTAVI

OPERATION	# PRECEDENTI
FirstOperation	18

► # Operations = 18

ANTIFORENSICCOPYEXIF

OPERATION	# PRECEDENTI
TimeAlterationWarp	7
CopyPaste	5
SelectCutFrames	2
RemoveCamFingerprint PRNII	1
OverlayObject	1
PasteSampled	1

► # Operations = 17

COPYPASTE

OPERATION	# PRECEDENTI
OutputAVI	8

► # Operations = 8

MFC18_EVAL_GAN_IMAGE_CROP

- ▶ Analisi dello score tramite Soglia e OptOut (1/3)
 - ▶ Numero di ProbeID nel CSV score: 1000
 - ▶ Numero di ProbeID nel JSON contente le probe history: 476
 - ▶ Numero di ProbeID che matchano nel JSON contente le probe history e che possono essere analizzate: 476
 - ▶ Numero di ProbeID non trovati nel JSON contente le probe history: 524

MFC18_EVAL_GAN_IMAGE_CROP

- ▶ Analisi dello score tramite Soglia e OptOut (2/3) – Recurrence –

SCORE = -1

AntiForensicJPGCompression	196
AddCamFingerprintPRNU	134
AddCameraModel	77

▶ # Probe = 196

- ▶ Non è stato possibile trovare una soglia degli score dovuto al risultato della ROC_AUC pari a circa 0.65

MFC18_EVAL_GAN_IMAGE_CROP

► Analisi dello score tramite Soglia e OptOut (3/3) – NOJSON –

PROBE	SCORE	FORMATO
01917724452f85177dbedb5290507d99	-1.000000	jpg
01bac7b246dfceb5bb89130125c5ad1b	-1.000000	jpg
01cc7de4f681ffc2cd340f27d7c8b17f	-1.000000	jpg
01db616b3fba54bb8d7ffbd63bdfb7fa	0.160178	jpg
02a64d68e0763777f1311561aa4b5af1	-1.000000	jpg
02cf82365bca9e4f09c732c063898878	-1.000000	jpg
02d0a6567d71b3763219aab59fff9589	0.168974	jpg
02e02b37d11f5f65b9ea69ec10781268	-1.000000	jpg
...

- Numero elementi totali non trovati nel file JSON contente le storie: **524**
 - numero elementi con score uguale al valore optout -1: **293**
 - avente inoltre formato jpg **293**
 - numero elementi score maggiore o uguale del valore soglia 0.3: **114**
 - avente inoltre formato jpg **3**
 - numero elementi con score minore del valore soglia 0.3: **117**
 - avente inoltre formato jpg **115**

MFC18_EVAL_GAN_IMAGE_CROP

Filtro1 (Score = -1)

ANTIFORENSICJPGCOMPRESSION

PROBE	N°	N°TOT
015a86c67e561b8744c71fcdd8ca7140	1	1
028f3ad591a844b98e2288e9154fe123	2	2
070489f7bd6ea14289e63357de7c40c9	3	3
079989aacac99e6fec9dff68ec9c016	3	3
07f0c3e776c2e9dbe2449c1cdf63c450	1	1
07f452c0851ab230b4d62e839f188255	3	3
083d8ec1869dafb2faf9c9b489aff0bf	3	3
08bbc9affaf20aafb1c56cbfa72e7d04	3	3
0f47b5843a31c20b2871c8329e7a1fe8	3	3
...

		N° TOT		
		1	2	3
N°	1	62	0	0
	2	0	57	0
	3	0	0	77

ADDCAMFINGERPRINTPRNU

PROBE	N°	N°TOT
028f3ad591a844b98e2288e9154fe123	1	2
070489f7bd6ea14289e63357de7c40c9	1	3
079989aacac99e6fec9dff68ec9c016	1	3
07f452c0851ab230b4d62e839f188255	1	3
083d8ec1869dafb2faf9c9b489aff0bf	1	3
08bbc9affaf20aafb1c56cbfa72e7d04	1	3
0f47b5843a31c20b2871c8329e7a1fe8	1	3
122b2f1949757b4c4e408d2517bfb2b0	1	2
17a6ef6ef565100add288961a1b57fe6	1	3
...

		N° TOT		
		1	2	3
N°	1	0	57	77
	2	0	0	0
	3	0	0	0

ADDCAMERAMODEL

PROBE	N°	N°TOT
028f3ad591a844b98e2288e9154fe123	1	2
070489f7bd6ea14289e63357de7c40c9	1	3
079989aacac99e6fec9dff68ec9c016	1	3
07f452c0851ab230b4d62e839f188255	1	3
083d8ec1869dafb2faf9c9b489aff0bf	1	3
08bbc9affaf20aafb1c56cbfa72e7d04	1	3
0f47b5843a31c20b2871c8329e7a1fe8	1	3
122b2f1949757b4c4e408d2517bfb2b0	1	2
17a6ef6ef565100add288961a1b57fe6	1	3
...

		N° TOT		
		1	2	3
N°	1	0	0	0
	2	0	0	77
	3	0	0	0

MFC18_EVAL_GAN_IMAGE_CROP

► Filtro2 (Score = -1)

ANTIFORENSICJPGCOMPRESSION

OPERATION	N° PRE
AddCameraModel	77
FirstOperation	62
AddCamFingerprintPRNU	57

ADDCAMFINGERPRINTPRNU

OPERATION	N° PRE
FirstOperation	134

ADDCAMERAMODEL

OPERATION	N° PRE
AddCamFingerprintPRNU	77

► # Operations = 196

► # Operations = 134

► # Operations = 77

MFC18_EVAL_GAN_VIDEO_VER3

- ▶ Analisi dello score tramite Soglia e OptOut (1/3)
 - ▶ Numero di ProbelD nel CSV score: 118
 - ▶ Numero di ProbelD nel JSON contente le probe history: 108
 - ▶ Numero di ProbelD che matchano nel JSON contente le probe history e che possono essere analizzate: 10
 - ▶ Numero di ProbelD non trovati nel JSON contente le probe history: 108

MFC18_EVAL_GAN_VIDEO_VER3

- ▶ Analisi dello score tramite Soglia e OptOut (2/3) – Recurrence –

SCORE = -1

None

SCORE < 0.3

PasteSampled	4
OutputCopy	3
AntiForensicCopyExif	1

SCORE > 0.3

PasteSampled	6
AntiForensicCopyExif	4
OutputCopy	2

▶ # Probe = 0

▶ # Probe = 4

▶ # Probe = 6

MFC18_EVAL_GAN_VIDEO_VER3

► Analisi dello score tramite Soglia e OptOut (3/3) – NOJSON –

PROBE	SCORE	FORMATO
80bd40c550e37648235763809af14a80	-1.0	mp4
0744b28204e95f9a36dadecb36a576c2	-1.0	mov
9950bdcc2aa13811ec11ecca6b9591ae	-1.0	mts
72018efc2569316de0e431f3706ed0cb	-1.0	mov
f84d75d04966115e98abb7e1f3833d04	-1.0	mp4
dca87015a9e35655367e716921855bf8	-1.0	mp4
4c5acf5037cf23851e409362d293b2a4	-1.0	mov
e0ccd894d07612da84cc9194ee9c4aff	-1.0	mov
...

► Numero elementi totali non trovati nel file JSON contente le storie: 108

► numero elementi con score uguale al valore optout -1: 16

► avente inoltre formato jpg 0

► numero elementi score maggiore o uguale del valore soglia 0.3: 55

► avente inoltre formato jpg 0

► numero elementi con score minore del valore soglia 0.3: 37

► avente inoltre formato jpg 0

MFC18_EVAL_GAN_VIDEO_VER3

▶ Filter1 (Score = -1)

NONE

MFC18_EVAL_GAN_VIDEO_VER3

▶ Filtro2 (Score = -1)

NONE

MFC18_EVAL_GAN_VIDEO_VER3

► Filtro2 (Score < 0.3)

PASTESAMPLED

OPERATION	N° PRE
FirstOperation	4

OUTPUTCOPY

OPERATION	N° PRE
PasteSampled	3

ANTIFORENSICCOPYEXIF

OPERATION	N° PRE
PasteSampled	1

► # Operations = 4

► # Operations = 3

► # Operations = 1

MFC18_EVAL_GAN_VIDEO_VER3

► Filtro2 (Score > 0.3)

PASTESAMPLED

OPERATION

N° PRE

FirstOperation

6

ANTIFORENSICCOPYEXIF

OPERATION

N° PRE

PasteSampled

4

OUTPUTCOPY

OPERATION

N° PRE

PasteSampled

2

► # Operations = 6

► # Operations = 4

► # Operations = 2