HISTORIAN: A large-scale HISTORIcal Film Dataset with Cinematographic ANnotation

Paper ID: 2383 VISUAL **HISTORY** OF THE HOLOCAUST

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INTRODUCTION

HISTORIAN, a new dataset, captures novel challenges and characteristics of historical footage.

The entire dataset is published on Zenodo to promote research on automatic film analysis.

Quantitative assessment is proposed by evaluating an automatic film analysis pipeline.

Global and local artifacts:

(a) Horizontal shrinking,

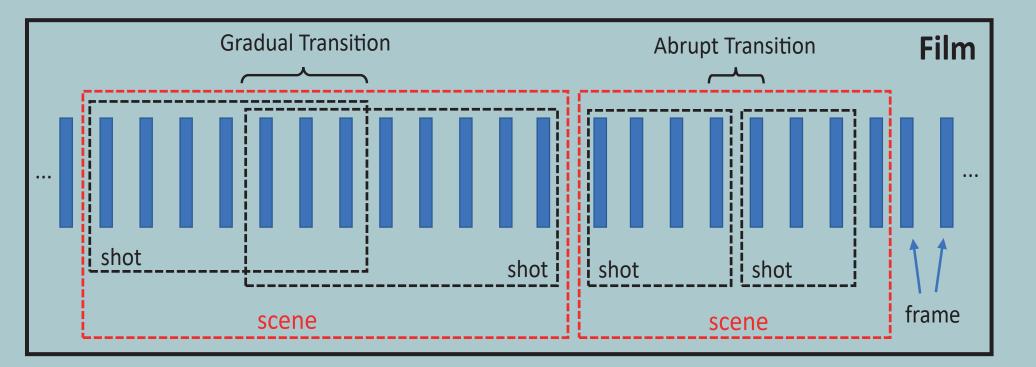
(b) frame lines, (c) melt,

(e,f) brights and darks,

(h) tears

(g) press cuts/cue dots,

(d) vertical scratch (dust),



Hierachical structure of professional film documentaries

Characteristics and artifacts of digitized analog historical footage

Table 1: Comparison of state-of-the-art film-related datasets. (SB) Shot Boundaries, (ST) Shot Types, (CM) Camera Movements, (OA) Overscan Areas

Dataset	color	Cinematographic Settings			
	b/w	SB	ST	CM	OA
DeepSBD [1]	color	•			
Clipshot [2]	color	•			
Cinescale [3]	color		•		
MovieNet (Trailers) [4]	color	•	•	•	
HistShotDS [5]	color,b/w		•		
Overscan Areas [6]	color,b/w				•
HISTORIAN (ours)	color,b/w	•	•	•	•

Comparison of state-of-the-art datasets and HISTORIAN

DATASET

HISTORIAN consists of 98 unprocessed original digitized analog film documentaries recorded

Collaborated annotation process of computer

Shot Types

Camera Movements

Overscan regions



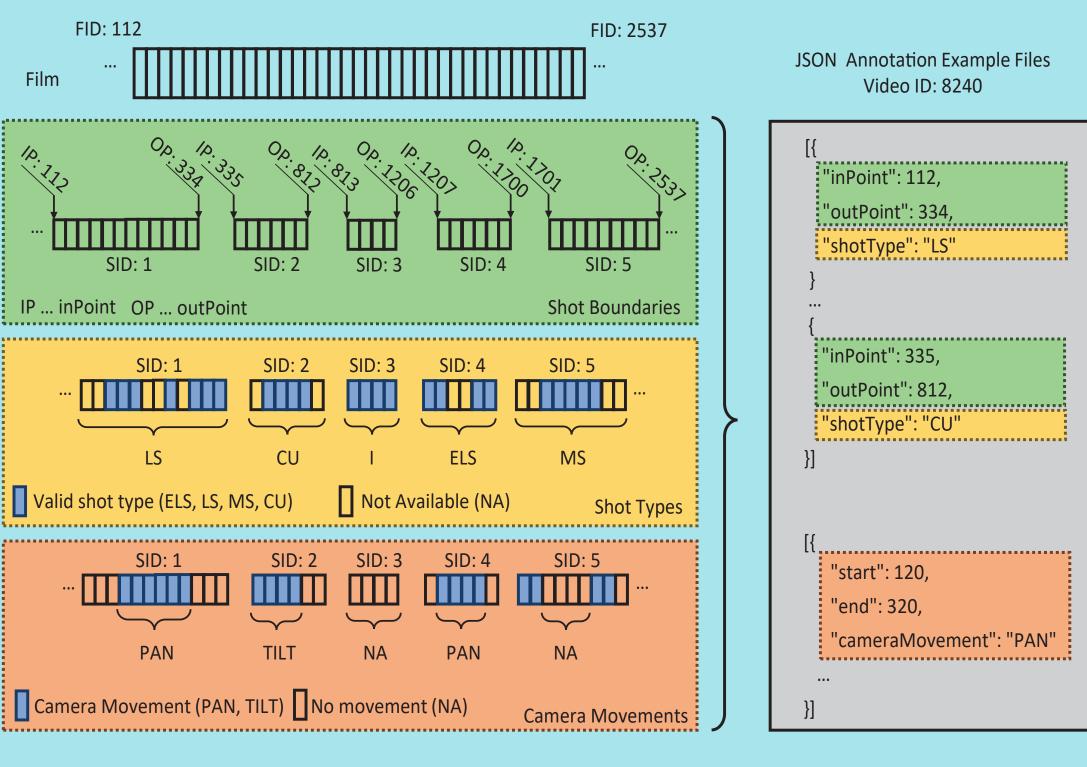
during the Second World War (1943-1945).

vision and film experts.

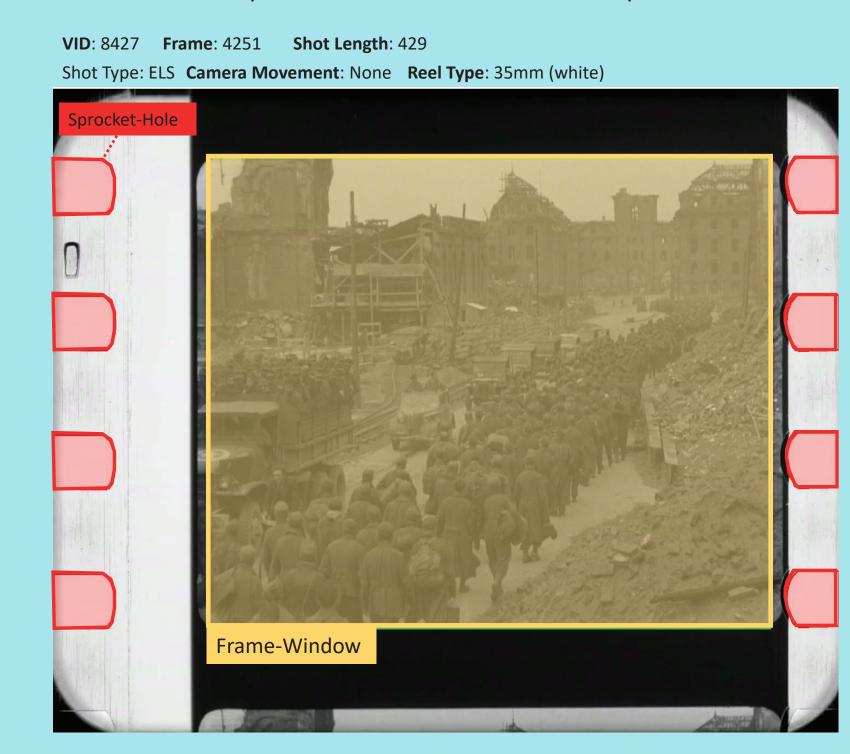
Cinematographic annotations:

Shot Boundaries

Schematic illustration of the annotation process



Example of an annotated samples



Dataset Key Facts & Distribution:

Number of films: 98 Number of frames ~1.5 million

dolly

pan_tilt

zoom

pedestial

Average length: ~11 minutes

Number of annotated shots: 10593 Number of annotated sequences: 838

Number of annotated frames: 192

Camera Movements (838) Shot Types (10593) ■ track ■ tilt truck

Shot Type Classifcation:

Sprocket-Hole (Overscan) segmentation:

Dice-Coefficient = 88.1%

Evaluation of an automatic film analysis pipeline as baseline for further research.

Shot Boundary Detection:

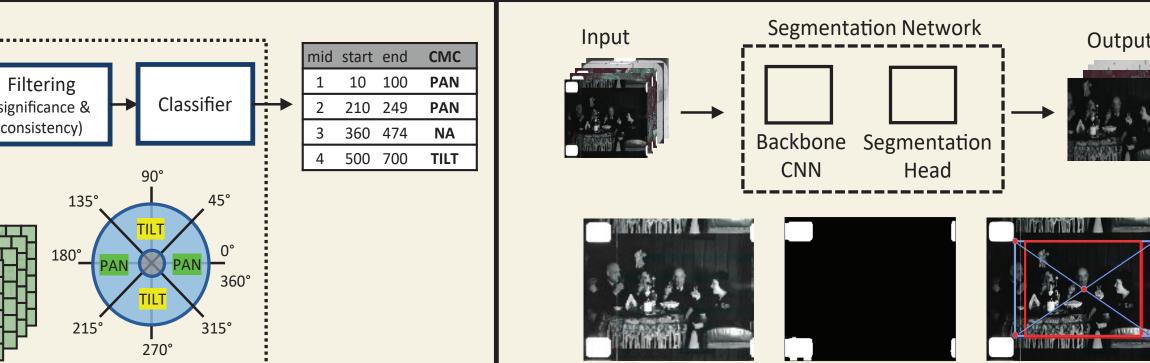
 $F_{1.Score} = 87\%$

Accurary = 75% Camera Movements Classification:

Accuracy = 82%

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Backbone 795 804 Exact frame 795 804 **ELS** positions of shots fid: 201 Mode Process sid X Segmentation Network



Baseline Film Analysis Pipeline:

a) Shot Boundary Detection

b) Shot Type Classification

c) Camera Movements Classification

d) Overscan Detection

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■ ELS

HISTORIAN, a novel dataset, includes cinematographic annotations based on original digitized historical film documentaries.

Captures challenges and characteristics of digitized historical film documentaries



Publicly available on Zenodo