

A COLLECTION OF 100 4K VIDEO SEQUENCES

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As mentioned before, we have used a large database of 100 openly available UHD training sequences for our training process. The sequences were downloaded from a variety of sources, more specifically, Netflix Chimera [1], Ultra Video Group [2], Harmonic Inc [3], SJTU [4] and AWS Elemental [5]. All the sequences were spatially cropped to UHD (if originally 4K resolution, 4096×2160 pixels), converted to 4:2:0 chroma subsampling (if originally 4:2:2 or 4:4:4) and temporally cropped to 64 frames. We used 64 frames to reduce the time required to encode all the training sequences. In addition, each sequence contains a single scene (without scene cuts) and the majority of the test sequences have a frame rate of 60 fps and bit depth of 10 bits per sample. Further detailed specifications of all training sequences can be found in the tables in the next pages. To illustrate the variety of video content found in our training dataset, the figure below shows a sample frame of each training sequence.

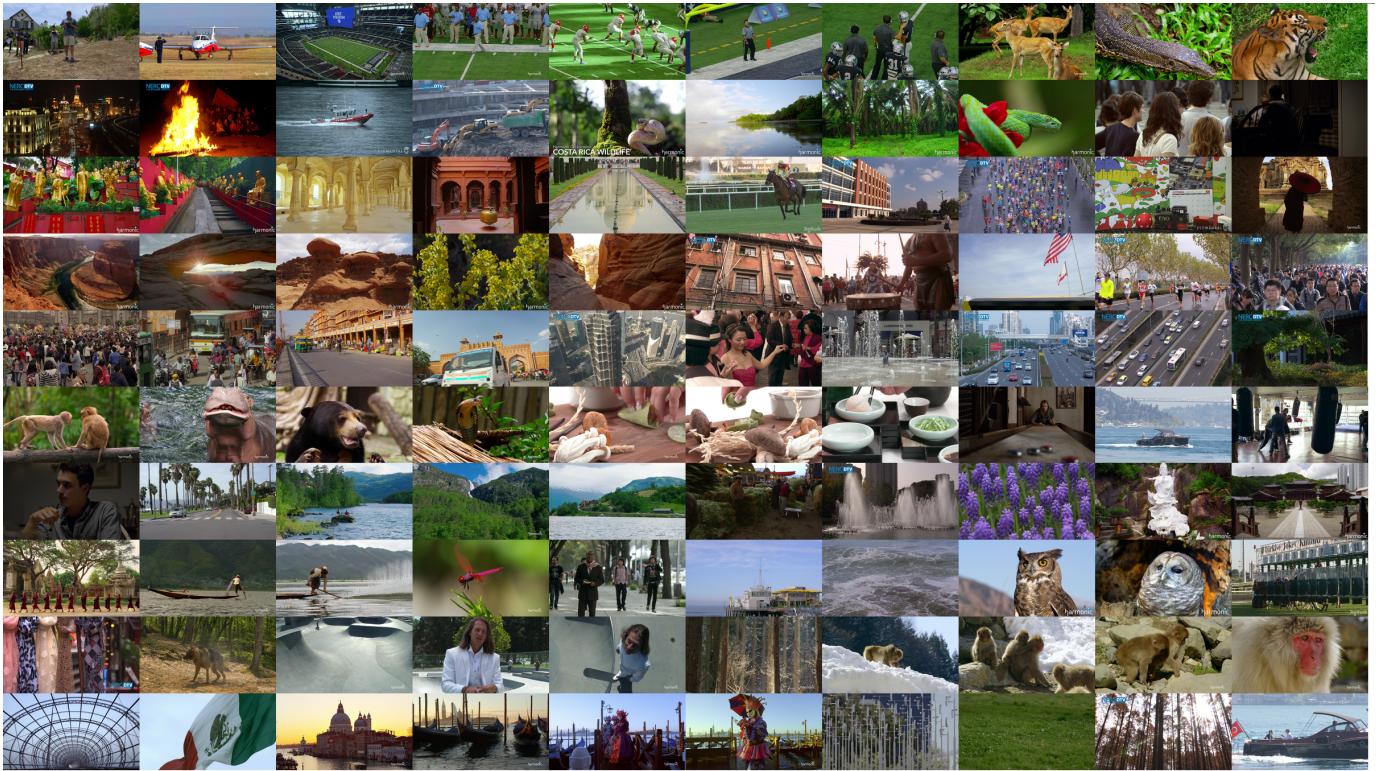


Fig. 1: Sample frame of each of the 100 training sequences.

REFERENCES

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- [2] T. U. Ultra Video Group, <http://ultravideo.cs.tut.fi/>, [Online; accessed 2017-01-23].
- [3] Harmonic Inc 4K demo footage, <https://www.harmonicinc.com/4k-demo-footage-download/>, [Online; accessed 2017-05-01].
- [4] L. Song, X. Tang, W. Zhang, X. Yang, and P. Xia, “The sjtu 4k video sequence dataset,” in *Quality of Multimedia Experience (QoMEX), 2013 Fifth International Workshop on*. IEEE, 2013, pp. 34–35.
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TABLE I: Specification of the 100 video sequences used for training. Legend: NFX - Netflix, HAR - Harmonic Inc, UVG - Ultra Video Group, ELE: Elemental.

Sequence Name	Res.	Frame rate	Bit depth	Chroma	Number frames	Source
Aerial	UHD	60	10	420	64	NFX
Air-Acrobatics-Scene1	UHD	60	10	420	64	HAR
American-Football-Scene2	UHD	60	10	420	64	HAR
American-Football-Scene3	UHD	60	10	420	64	HAR
American-Football-Scene4	UHD	60	10	420	64	HAR
American-Football-Scene5	UHD	60	10	420	64	HAR
American-Football-Scene6	UHD	60	10	420	64	HAR
Animals-Scene1	UHD	60	10	420	64	HAR
Animals-Scene10	UHD	60	10	420	64	HAR
Animals-Scene11	UHD	60	10	420	64	HAR
Animals-Scene3	UHD	60	10	420	64	HAR
Animals-Scene5	UHD	60	10	420	64	HAR
Animals-Scene7	UHD	60	10	420	64	HAR
Animals-Scene9	UHD	60	10	420	64	HAR
Asian-Fusion-Scene3	UHD	60	10	420	64	HAR
Asian-Fusion-Scene5	UHD	60	10	420	64	HAR
Asian-Fusion-Scene7	UHD	60	10	420	64	HAR
Barscene	UHD	60	10	420	64	NFX
Bosphorus	UHD	120	10	420	64	UVG
Boxingpractice	UHD	60	10	420	64	NFX
Bundnightscape	UHD	60	10	420	64	NFX
Campfireparty	UHD	60	10	420	64	SJTU
Coastguard	UHD	60	10	420	64	ELE
Constructionfield	UHD	60	10	420	64	SJTU
Costa-Rica-Scene1	UHD	60	10	420	64	HAR
Costa-Rica-Scene2	UHD	60	10	420	64	HAR
Costa-Rica-Scene3	UHD	60	10	420	64	HAR
Costa-Rica-Scene4	UHD	60	10	420	64	HAR
Crosswalk	UHD	60	10	420	64	NFX
Dinnerscene-Scene1	UHD	60	10	420	64	NFX
Dinnerscene-Scene2	UHD	60	10	420	64	NFX
Drivingpov	UHD	60	10	420	64	NFX
Fjords-Scene1	UHD	60	10	420	64	HAR
Fjords-Scene2	UHD	60	10	420	64	HAR
Fjords-Scene3	UHD	60	10	420	64	HAR
Foodmarket-Scene1	UHD	60	10	420	64	NFX
Fountains	UHD	60	10	420	64	SJTU
Honeybee	UHD	120	10	420	64	UVG
Hong-Kong-Scene1	UHD	60	10	420	64	HAR
Hong-Kong-Scene2	UHD	60	10	420	64	HAR
Hong-Kong-Scene3	UHD	60	10	420	64	HAR
Hong-Kong-Scene4	UHD	60	10	420	64	HAR
India-Buildings-Scene2	UHD	60	10	420	64	HAR
India-Buildings-Scene3	UHD	60	10	420	64	HAR
India-Buildings-Scene4	UHD	60	10	420	64	HAR
Jockey	UHD	120	10	420	64	UVG
Library	UHD	60	10	420	64	SJTU
Marathon	UHD	60	10	420	64	SJTU
Mobile	UHD	60	10	420	64	ELE
Myanmar-Scene3	UHD	60	10	420	64	HAR
Myanmar-Scene4	UHD	60	10	420	64	HAR
Myanmar-Scene5	UHD	60	10	420	64	HAR
Myanmar-Scene6	UHD	60	10	420	64	HAR
Myanmar-Scene7	UHD	60	10	420	64	HAR

Sequence Name	Res.	Frame rate	Bit depth	Chroma	Number frames	Source
Narrator	UHD	60	10	420	64	NFX
Pierseaside-Scene1	UHD	60	10	420	64	NFX
Pierseaside-Scene2	UHD	60	10	420	64	NFX
Raptors-Scene1	UHD	60	10	420	64	HAR
Raptors-Scene2	UHD	60	10	420	64	HAR
Readysetgo	UHD	120	10	420	64	UVG
Red-Rock-Vol3-Scene1	UHD	60	10	420	64	HAR
Red-Rock-Vol3-Scene3	UHD	60	10	420	64	HAR
Red-Rock-Vol3-Scene4	UHD	60	10	420	64	HAR
Red-Rock-Vol3-Scene5	UHD	60	10	420	64	HAR
Red-Rock-Vol-Scene6	UHD	60	10	420	64	HAR
Residentialbuilding	UHD	60	10	420	64	SJTU
Ritualdance	UHD	60	10	420	64	NFX
Rollercoaster	UHD	60	10	420	64	NFX
Runners	UHD	60	10	420	64	SJTU
Rushhour	UHD	60	10	420	64	SJTU
Scarf	UHD	60	10	420	64	SJTU
Shakendry	UHD	120	10	420	64	UVG
Skateboarding-Scene12	UHD	60	10	420	64	HAR
Skateboarding-Scene7	UHD	60	10	420	64	HAR
Skateboarding-Scene8	UHD	60	10	420	64	HAR
Snow-Monkeys-Scene1	UHD	60	10	420	64	HAR
Snow-Monkeys-Scene2	UHD	60	10	420	64	HAR
Snow-Monkeys-Scene3	UHD	60	10	420	64	HAR
Snow-Monkeys-Scene5	UHD	60	10	420	64	HAR
Snow-Monkeys-Scene6	UHD	60	10	420	64	HAR
Squareandtimelapse	UHD	60	10	420	64	NFX
Streets-Of-India-Scene1	UHD	60	10	420	64	HAR
Streets-Of-India-Scene2	UHD	60	10	420	64	HAR
Streets-Of-India-Scene3	UHD	60	10	420	64	HAR
Tallbuildings	UHD	60	10	420	64	SJTU
Tango	UHD	60	10	420	64	NFX
Toddlerfountain	UHD	60	10	420	64	NFX
Trafficandbuilding	UHD	60	10	420	64	SJTU
Trafficflow	UHD	60	10	420	64	SJTU
Treeshade	UHD	60	10	420	64	SJTU
Tunnelflag-Scene1	UHD	60	10	420	64	NFX
Tunnelflag-Scene2	UHD	60	10	420	64	NFX
Venice-Scene1	UHD	60	10	420	64	HAR
Venice-Scene2	UHD	60	10	420	64	HAR
Venice-Scene3	UHD	60	10	420	64	HAR
Venice-Scene4	UHD	60	10	420	64	HAR
Windandnature-Scene1	UHD	60	10	420	64	NFX
Windandnature-Scene2	UHD	60	10	420	64	NFX
Wood	UHD	60	10	420	64	SJTU
Yachtride	UHD	120	10	420	64	UVG