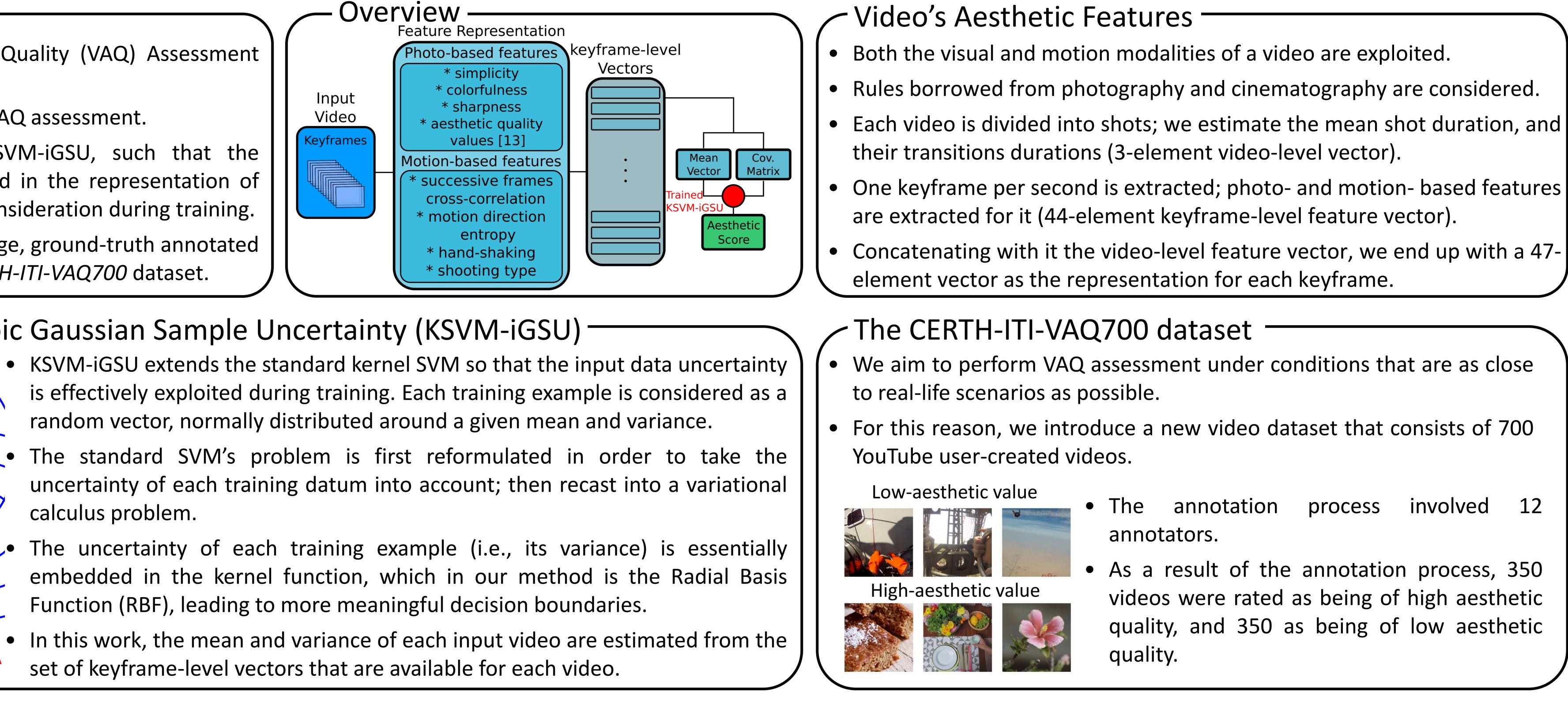


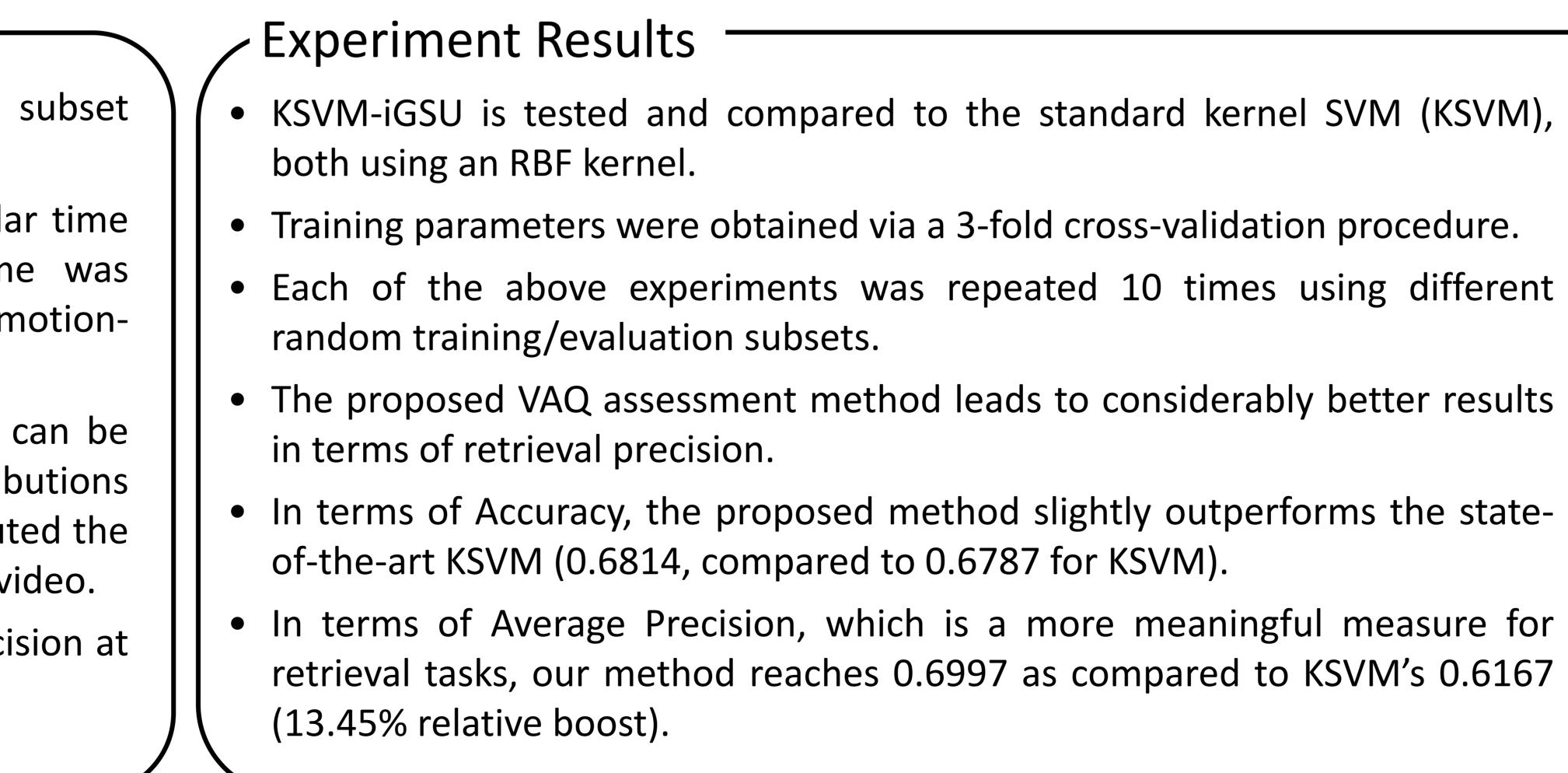
VIDEO AESTHETIC QUALITY ASSESSMENT USING KERNEL SUPPORT VECTOR MACHINE WITH ISOTROPIC GAUSSIAN SAMPLE UNCERTAINTY (KSVM-iGSU)

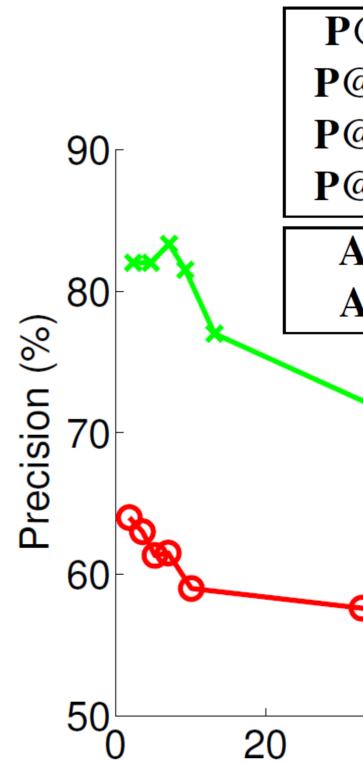
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Overview Introduction Feature Representation • We treat the Video Aesthetic Quality (VAQ) Assessment * simplicity task as a retrieval problem. * colorfulness Input * sharpness • We present a new method for VAQ assessment. Video aesthetic quality values [13] *(eyframe* • We introduce the use of KSVM-iGSU, such that the Motion-based features uncertainty that is encapsulated in the representation of successive frames cross-correlation the input videos is taken into consideration during training. motion direction entropy • We make publicly available a large, ground-truth annotated * hand-shaking video dataset for VAQ, the CERTH-ITI-VAQ700 dataset. shooting type Kernel SVM with Isotropic Gaussian Sample Uncertainty (KSVM-iGSU) - (\mathbf{H}) random vector, normally distributed around a given mean and variance. (\bigcirc) calculus problem. (\otimes) Function (RBF), leading to more meaningful decision boundaries. KSVM-iGSU KSVM set of keyframe-level vectors that are available for each video. Experimental setup Experiment Results

- The dataset was randomly split into a training subset (50%) and an evaluation subset (50%).
- One keyframe per second was extracted at regular time intervals from each video, and each keyframe was represented using the proposed photo- and motionbased features.
- The above keyframe-level video representations can be seen as observations of the input Gaussian distributions that describe the training videos. Thus, we computed the sample mean and sample variance for each input video.
- Evaluation measures: average precision (AP), precision at depth n, accuracy (AC).







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The annotation process involved 12

• As a result of the annotation process, 350 videos were rated as being of high aesthetic quality, and 350 as being of low aesthetic

	KSVM	KSVM-iGSU	
	(as in [7, 9, 10])	(Proposed)	
@5	0.6400	0.8200	
@10	0.6300	0.8200	
@15	0.6133	0.8333	
@20	0.6150	0.8150	
AC	0.6787	0.6814	
AP	0.6167	0.6997	

