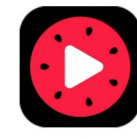
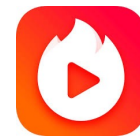


JVET-AG0198

Non-EE2: Coding Info based ALF Classification

Wenbin Yin, Kai Zhang and et. al

Bytedance Inc.



Summary

■ Motivation

- The Coding Info is Available but NOT Utilized in ALF
 - Prediction Mode Info
 - Partitioning Info
- The Coding Info Can Reflect the Content Feature and Help to Achieve Better Classification

■ Proposed Solution

- Coding Info based Classification for ALF

Current Design in ECM-11.0

■ 3 Classification Methods

- Texture Classifier
- Band Classifier
- Residual Classifier

■ Switchable Design

- CTU Level Selection

■ Class Number

- 25 Classes for Each Classifiers

Proposed Methods

- **Keep 3 Classifier Unchanged**
- **Keep Switchable Design Unchanged**
- **Introduce Coding Info into Each Classifier**
 - Classify Each Classification Unit into 2 Noise Levels based on Coding Info
 - Combine Noise Level with Existing Classification Results
 - Reduce Class Number from 25 to $2 \times 12 = 24$
- **No Additional Signaling is Required**

Simulation Results

- Anchor is ECM-11.0
- Table Shows the Performance of the Proposed Method

	AI					RA					LB				
	Y	U	V	EncT	DecT	Y	U	V	EncT	DecT	Y	U	V	EncT	DecT
Class-A1	0.02%	-0.01%	-0.01%	101.3%	99.6%	0.00%	-0.05%	0.04%	99.9%	99.6%					
Class-A2	0.02%	-0.01%	-0.01%	98.7%	100.7%	0.00%	0.03%	-0.08%	99.9%	100.8%					
Class-B	0.01%	-0.01%	-0.01%	99.9%	100.1%	-0.01%	0.02%	-0.01%	100.3%	101.1%	-0.06%	0.33%	0.65%	100.2%	100.7%
Class-C	0.00%	0.00%	0.00%	101.0%	100.0%	-0.10%	-0.03%	0.02%	100.5%	99.9%	-0.12%	-0.10%	-0.20%	101.0%	100.6%
Class-E	0.00%	-0.01%	-0.01%	99.9%	101.1%						-0.15%	-0.70%	-0.34%	100.2%	98.6%
Overall	0.01%	-0.01%	-0.01%	100.1%	100.3%	-0.03%	-0.01%	-0.01%	100.2%	100.4%	-0.10%	-0.07%	0.12%	100.5%	100.1%
Class-D	0.00%	0.00%	0.00%	99.5%	100.1%	-0.01%	0.04%	-0.05%	101.1%	100.9%	-0.05%	-0.18%	-0.41%	101.8%	100.6%
Class-F	0.03%	-0.02%	-0.02%	100.4%	101.8%	-0.04%	-0.04%	-0.09%	100.6%	100.2%					

Conclusion

- Coding Info based ALF Classification is Proposed
- Introduce Coding Info into Each Existing Classifiers
- Promising Coding Gain Can be Achieved with Negligible Coding Time Increase
- Recommended to Include into Next Round of EE2

Thanks!