

JEG-Hybrid

Joint Effort Group

Updates on JEG-Hybrid Activities (including the IGVQM project)

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VQEG Dec 2023 Meeting

Original Mission and Current Focus

- Originally: develop a no reference Hybrid Perceptual/Bit-Stream model
- Over the last few years, the activities gradually evolved over time to include several areas of Video Quality Assessment (VQA)
 - Tackling new **research questions** with hopefully **long term impact** on the video quality research community
 - Currently not directly seeking the development of new metrics or tools readily available for VQA

Current Activities

- Strong research interests in modeling **single observers' behaviors** in subjective experiments using
 - **AI observers**
 - **A human-in-the-loop approach** to develop AI-based systems
(presentations follows in this JEG-Hybrid session)
- **IGVQM** (Implementer's Guide to Video Quality Metrics)
 - Recent call for participation on the main VQEG ML (1 response so far)
 - More info on JEG-Hybrid website: <https://vqegjeg.github.io/jeg-hybrid/igvqm>

Implementer's Guide to Video Quality Metrics: Plan


- Use a large set of subjectively-annotated datasets to offer standard guidelines in correctly using VQMs
 - Based on open data and reproducible experiments, typically using
 - Open-source libraries such as libVMAF
 - Containers for reproducibility
 - currently exploring the "Singularity" container format, suitable for HPC (High-Performance Computing)

Database name	Contributor	Year	# of sources	# of PVS	# of opinion scores	Methodology	Scale (discrete/continuous)	Scoring
FOO	BAR	2008	30	300	9000	ACR	Discrete	
VQEG HD 1 to 5	VQEG	2010				ACR-HR	Discrete	
ITS4S	NTIA/ITS	2018				ACR	Discrete	
ITS4S2	NTIA/ITS	2019				ACR	Discrete	
ITS4S3	NTIA/ITS	2019				ACR	Discrete	
ITS4S4	NTIA/ITS	2020				ACR	Discrete	
CCRIQ	Intel, ITS, U. Gh	2016				ACR	Discrete	
Public Safety #1	NTIA/ITS	2005				ACR-HR	Discrete	
Public Safety #2	NTIA/ITS	2006				ACR-HR	Discrete	
T1A1	ATIS	1996				DSIS	Discrete	
GamingVideoSET	KU	2018	6	90	2250	ACR	Discrete	
KUGVD	KU	2018	6	90	1530	ACR	Discrete	
AVT-VQDB-UHD-1	TU Ilmenau	2019	12	756	around 18,000 (t	ACR	Discrete	
AGH/NTIA/Dolby	AGH, NTIA, Dolt	2018				ACR-HR	Discrete	



Implementer's Guide to Video Quality Metrics: Plan

- Offering standardized functions / methods to perform common tasks such as
 - Temporal aggregation
 - Statistical analysis from subjective and objective data
 - Logistic mappings to a normalized linear scale
- Currently working on
 - Running the measures (now on the AGH-NTIA-Dolby dataset)
 - Making them available in standardized formats
- Then
 - Performing statistical analysis
 - Drafting reports/documents/publications



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More results in next VQEG face-to-face meetings

Comments / Proposals / Ideas

- Feel free to do it **now!**



- And/or join our biweekly conference call (next: **Jan 9, 2024, 4pm CET/CEST**)
- References:
 - **JEG-Hybrid website** <https://vqegjeg.github.io/jeg-hybrid/>
 - Including an up-to-date publication section with immediate download link for each one
 - **IGVQM** subsection: <https://vqegjeg.github.io/jeg-hybrid/igvqm>
 - VQEG-JEG mailing list: jeg@vqeg.org (<https://vqeg.org/email-reflectors.aspx>)