EUROGRAPHICS AACHEN 2026

HOW GOOD IS THIS VIDEO?

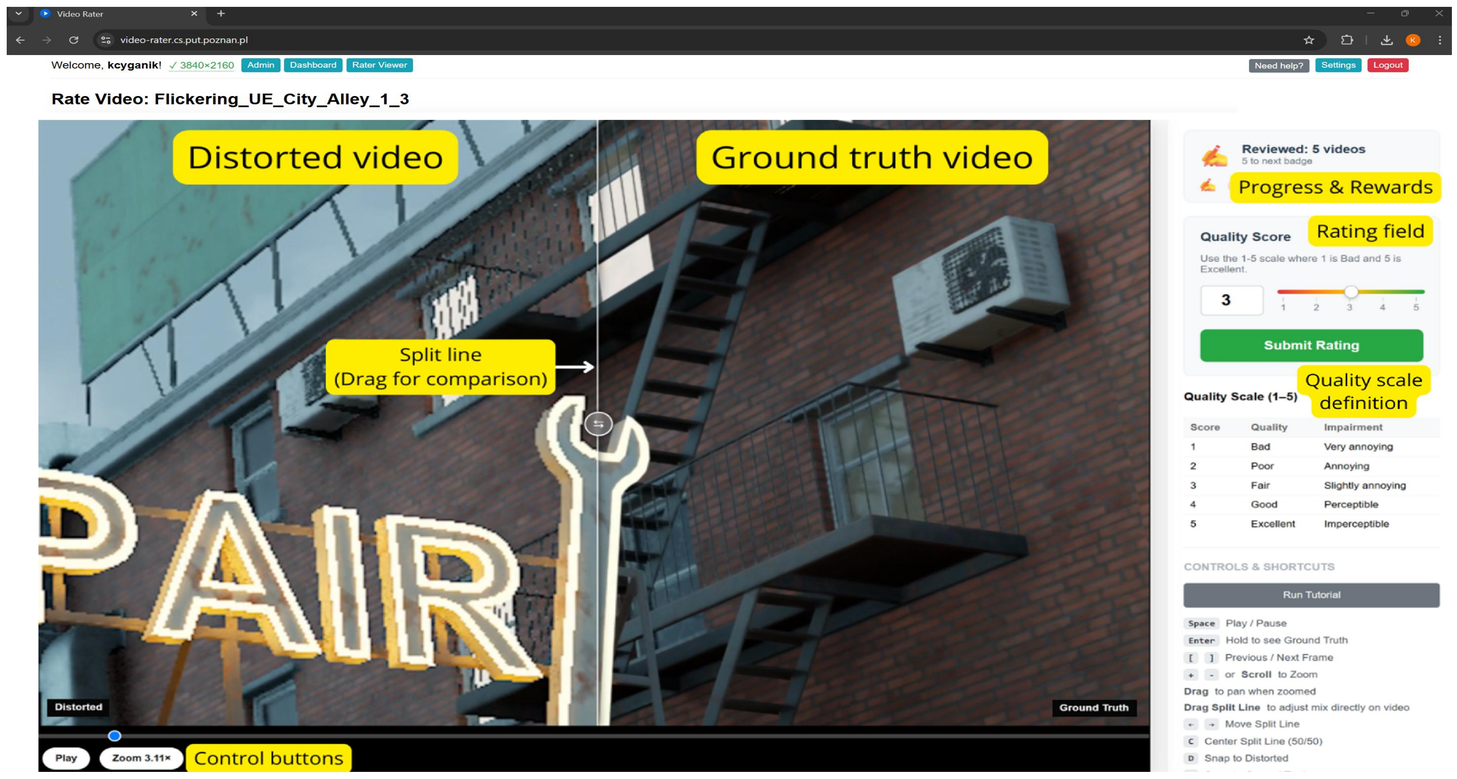
VIDEO RATER: A FRAMEWORK FOR SUBJECTIVE EVALUATION OF RENDERING ARTIFACTS

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PROBLEM

Assessing real-time rendering quality

- Temporal reconstruction in modern engines (like AMD FSR [1]) improves photorealism but introduces unique artifacts (e.g. ghosting, flickering).
- Standard video quality metrics (PSNR, VMAF [2]) are optimized for compression, not rendering artifacts.
- A lack of standardized methodologies and tools hinders the development of dedicated perceptual metrics.



TEMPORAL ARTIFACTS



METHODOLOGY

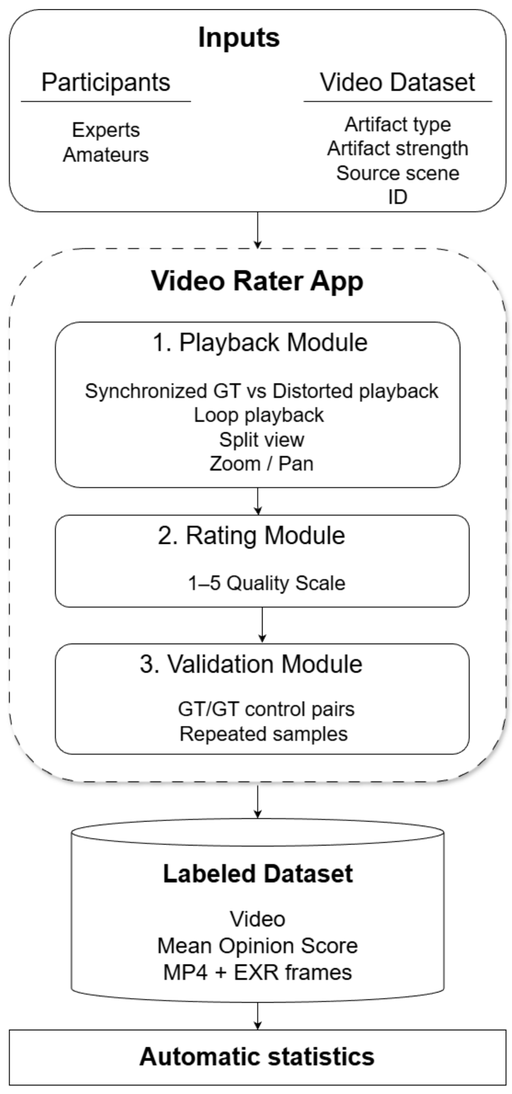
We designed a controlled assessment methodology based on the International Telecommunication Union BT.500 recommendations [3] to ensure statistically reliable subjective scores.

Video Rater App: A customizable Python web application for rating distorted videos against their ground-truth (GT) equivalents.

Assessment Process: Artifacts are assessed by showing synchronized pairs of videos in a loop: a distorted video and its GT. Videos are scored on a discrete five-point scale (1-5).

User Categorization: Participants are categorized as Experts (graphics R&D professionals) or Common users (e.g., game players).

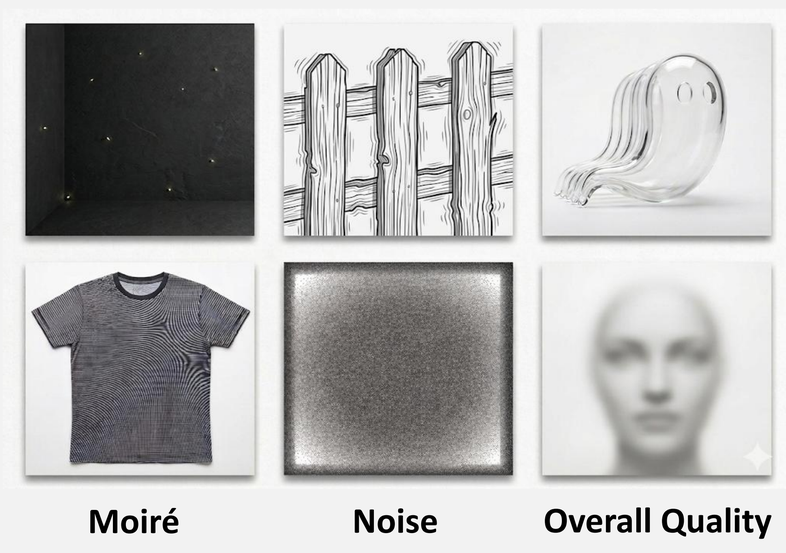
Data Validation: To assess reviewer reliability, one out of ten videos is a GT video paired with itself, and one is repeated.



USE CASE

Experimental study is in progress using a curated dataset of rendering artifacts.

Dataset:
- >200 high-quality sequences.
- Each video is 3 seconds long (90 frames) at a resolution of 2160x3840.
- Sequences are spatially cropped so that only a single dominant artifact is visible.



Leave some ratings yourself!

AFFILIATIONS

AMD

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REFERENCES

[1] AMD: Amd fsr™ technologies. 2026.
[2] LAK16: Toward a practical perceptual video quality metric. 2016.
[3] Uni23: Methodologies for the subjective assessment of the quality of television images. Recommendation ITU-R BT.500-15, 2023.