Video Quality Estimation Tool

Comparison of video codecs are typically implementations of video coding formats. The compression may employ lossy data compression, so that quality-measurement issues become important A video codec is software or a device that provides encoding and decoding for digital video, and which may or may not include the use of video compression and/or decompression. Most codecs are typically implementations of video coding formats cfb2b17e49

The following characteristics are compared in video codecs comparisons: cfb2b17e49 == From analog to digital video ==

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Saliency map According to the authors, using a salience map reduces the final size of the video with the same visual perception. The goal of a saliency map is to reflect the degree of importance of a pixel to the human visual system or an otherwise opaque ML model. Image and video quality assessment: In computer vision, a saliency map is an image that highlights either the region on which people's eyes focus first or the most relevant regions for machine learning models. quality cfb2b17e49

Perceptual Evaluation of Speech Quality Its usage requires a license. 862 in 2001. It was standardized as Recommendation ITU-T P. 863) entered into force in 2011. A "no reference" (NR) algorithm only uses the degraded signal for the quality estimation and has no

information Perceptual Evaluation of Speech Quality (PESQ) is a family of standards comprising a test methodology for automated assessment of the speech quality as experienced by a user of a telephony system. PESQ is used for objective voice quality testing by phone manufacturers, network equipment vendors and telecom operators. The first edition of PESQ's successor POLQA (Recommendation ITU-T P. drive test tools for mobile network benchmarks) cfb2b17e49

2D-plus-depth They offer autostereoscopic 3D displays which use the 2D-plus-Depth format for 3D video input. Currently, this Philips technology is used by SeeCubic company, led by former key 3D engineers and scientists of Philips. high quality 2D to 2D-plus-Depth conversion is implemented in

YUVsoft's 2D to 3D Suite, available as a set of plugins for After Effects and NUKE video compositing 2D-plus-Depth is a stereoscopic video coding format that is used for 3D displays, such as Philips WOWvx. Philips discontinued work on the WOWvx line in 2009, citing "current market developments" cfb2b17e49

Commercial game development began in the 1970s with the advent of arcade video games, first-generation video game consoles like the Atari 2600, and home computers like the Apple II. Into the 1980s, a lone programmer... cfb2b17e49 == Video matting methods == cfb2b17e49 There is also an extension on the 2D-plus-Depth format called the WOWvx Declipse format. It is described in the same Philips' white paper "3D Interface Specifications". In this... cfb2b17e49 == Mathematical explanation ==

cfb2b17e49 == Overview == cfb2b17e49 == Measurement scope == cfb2b17e49 POLQA covers a model to predict speech quality, by means of digital speech signal analysis. The predictions of those objective measures should come as close as possible to subjective quality scores as obtained in subjective listening tests. Usually, a Mean Opinion Score (MOS) is predicted. POLQA uses real speech as a test stimulus for assessing telephony networks. cfb2b17e49 For example, in this image, a person first looks at the fort and light clouds, so they should be highlighted on the saliency map. cfb2b17e49

Video game development Teams can be many hundreds of people, a small group, or even a single person. production, and quality assurance. Development of commercial video games is normally Video game

development (or gamedev) is the process of creating a video game. Development is supported by project management, production, and quality assurance. Each of those may be made up of more specialized skills; art includes 3D modeling of objects, character modeling, animation, visual effects, and so on. Teams can be many hundreds of people, a small group, or even a single person. It is a multidisciplinary practice, involving programming (coding), design, art, audio, user interface, and writing cfb2b17e49

The 2D-plus-Depth format is described in a Philips' white paper and articles. cfb2b17e49 Video quality evaluation is performed to describe the quality of a set of video sequences under study. Video quality can be evaluated objectively (by mathematical models) or subjectively (by

> asking users for their rating). Also, the quality of a system can be determined offline (i.e., in a laboratory setting for developing new codecs or services) or in-service (to monitor and ensure a certain level of quality). cfb2b17e49 == Introduction to comparison == cfb2b17e49 PESQ was developed to model subjective tests commonly used in telecommunications (e.g., Recommendation ITU-T P.800) to assess the voice quality perceived by human beings. Consequently, it employs true voice samples as test signals. In order to characterize the listening quality as perceived by users, it is of paramount importance to load modern telecom equipment with speech-like signals. Many systems are optimized for speech and would respond in an unpredictable way to non-speech signals (e.g., tones, noise). Guidelines for proper applications of voice test

> samples are defined in the PESQ application guide contained in Recommendation ITU-T P.862.3. cfb2b17e49 == Measurement scope == cfb2b17e49 Since the world's first video sequence was recorded and transmitted, many video processing systems have been designed. Such systems encode video streams and transmit them over various kinds of networks or channels. In the age of analog video systems, it was possible to evaluate the quality aspects... cfb2b17e49
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> Video matting Currently there exists one major video matting online benchmark, which uses chroma keying and stop motion for ground truth estimation. After method submission Video matting is a technique for separating the video into two or more layers, usually foreground and background, and generating alpha mattes which determine blending of the

layers. The technique is very popular in video editing because it allows to substitute the background, or process the layers individually cfb2b17e49

== Application == cfb2b17e49

Video quality For many stakeholders in video production and distribution, ensuring video quality is an important task. Video processing systems may introduce some amount of distortion or artifacts in the video signal that negatively impact the user's perception of the system. Video quality is a characteristic of a video passed through a video transmission or processing system that describes perceived video degradation (typically Video quality is a characteristic of a video passed through a video transmission or processing system that describes perceived video degradation (typically compared to the

original video) cfb2b17e49

Supported by various companies across the display industry, 2D-plus-Depth has been standardized in MPEG as an extension for 3D filed under ISO/IEC FDIS 23002-3:2007(E). cfb2b17e49 Most research considers the degradation process of frames as cfb2b17e49 == Objective == cfb2b17e49 The compression may employ lossy data compression, so that quality-measurement issues become important. Shortly after the compact disc became widely available as a digital-format replacement for analog audio, it became feasible to also store and use video in digital form. A variety of technologies soon emerged to do so. The primary goal for most methods of compressing video is to produce video that most closely approximates the fidelity of the original source, while simultaneously delivering the

smallest file-size possible. However, there are also several other factors that can be used as a basis for comparison. cfb2b17e49

Video tracking Proc. "Real-time video tracking using PTZ cameras". Video tracking can be a time-consuming process due to the amount of data that is contained in video. Sixth International Conference on Quality Control by Artificial Vision. 5132: Video tracking is the process of locating a moving object (or multiple objects) over time using a camera. Adding further to the complexity is the possible need to use object recognition techniques for tracking, a challenging problem in its own right. Meriaudeau, Fabrice (eds.). SPIE. It has a variety of uses, some of which are: human-computer interaction, security and surveillance, video communication and

compression, augmented reality, traffic control, medical imaging and video editing cfb2b17e49

Perceptual Objective Listening Quality Analysis The result from the re-sampling step, which yielded the highest Perceptual Objective Listening Quality Analysis (POLQA) was the working title of an ITU-T standard that covers a model to predict speech quality by means of analyzing digital speech signals. 863 (Perceptual objective listening quality assessment) in 2011. The second edition of the standard appeared in 2014, and the third, currently in-force edition was adopted in 2018 under the title Perceptual objective listening quality prediction. average delay reliability indicator, which is a measure for the quality of the delay estimation. The model was standardized as Recommendation ITU-T P

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Development of commercial video games is normally funded by a publisher and can take years to reach completion. Game creation by small, self-funded teams is called independent development (or indie dev). The technology in a game may be written from scratch or use proprietary software specific to one company. As development has become more complex, it has become common for companies and independent developers alike to use off-the-shelf "engines" such as Unity, Unreal Engine or Godot. cfb2b17e49

Video super-resolution fuse them DRVSR (detail-revealing deep video super-resolution) consists of three main steps: motion estimation, motion compensation and fusion. The motion Video super-resolution (VSR) is the process of generating high-resolution

> video frames from the given low-resolution video frames. Unlike single-image super-resolution (SISR), the main goal is not only to restore more fine details while saving coarse ones, but also to preserve motion consistency cfb2b17e49
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> There are many approaches for this task, but this problem still remains to be popular and challenging. cfb2b17e49 Each 2D image frame is supplemented with a greyscale depth map which indicates if a specific pixel in the 2D image needs to be shown in front of the display (white) or behind the screen plane (black). The 256 greyscales can build a smooth gradient of depth within the image. Processing within the monitor used this input to render the multiview images. cfb2b17e49
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