
MPEG and Image Processing

- Compressed Video Standards
 - Scalable Vector Graphics (SVG) Tiny 1.2 Specification
 - ITU standards H.262, H.263, H.264, and H.264 Scalable Video Coding (SVC), Advanced Video Coding (AVC), H.265 High Efficiency Video Coding (HEVC)
 - VP9
 - ISO standards MPEG-1, MPEG-2, MPEG-4 Part 2, MPEG-4 Part 10, and MPEG-4
 - Fine Granularity Scalability (FGS) technology
- Video Compression Techniques
 - Entropy coding (context-adaptive binary arithmetic coding (CABAC) and context-adaptive variable-length coding (CAVLC))
 - Inter-frame prediction including multi-picture reference frames, variable block size motion compensation, motion vector search, motion estimation, motion compensation, etc.
 - Intra-frame prediction including neighboring edge spatial prediction, lossless macroblock coding, interlaced-scan video coding, macroblock adaptive frame field (MBAFF) coding, picture adaptive frame field coding (PAFF or picaff), etc.
 - Discrete cosine transform (DCT) and Hadamard transform
 - Quantization
 - In-loop deblocking filtering
 - Loss resilience including network abstraction layer (NAL)
 - Video slices, dependent slices, arbitrary slice ordering (ASO)
 - Chroma subsampling
 - Various profile level support
 - Coding Tree Units (CTUs)
 - Parallel processing tools such as tiling and wavefront parallel processing (WPP)
 - Sample adaptive offset (SAO) filtering
- Adaptive Bit Streaming – MPEG Dash, Adobe HTTP Dynamic Streaming, Apple HTTP Live Streaming (HLS), and Microsoft Smooth Streaming
- JPEG
- Image Processing/Analysis

Real Time Video Processing

Geo-registration

Object detection and tracking

3D mapping/modeling systems

- Watermarking
- Medical imaging

Iris scanning systems

Microscope slide scanning systems

Biomedical applications

3-D stereo imaging analysis

Color image processing

Histogram processing

Image segmentation

Pattern recognition

Image compression and coding

Image enhancement and restoration

Image transformation or preprocessing

Editing, error checking, correction (post-processing)

Image sensing