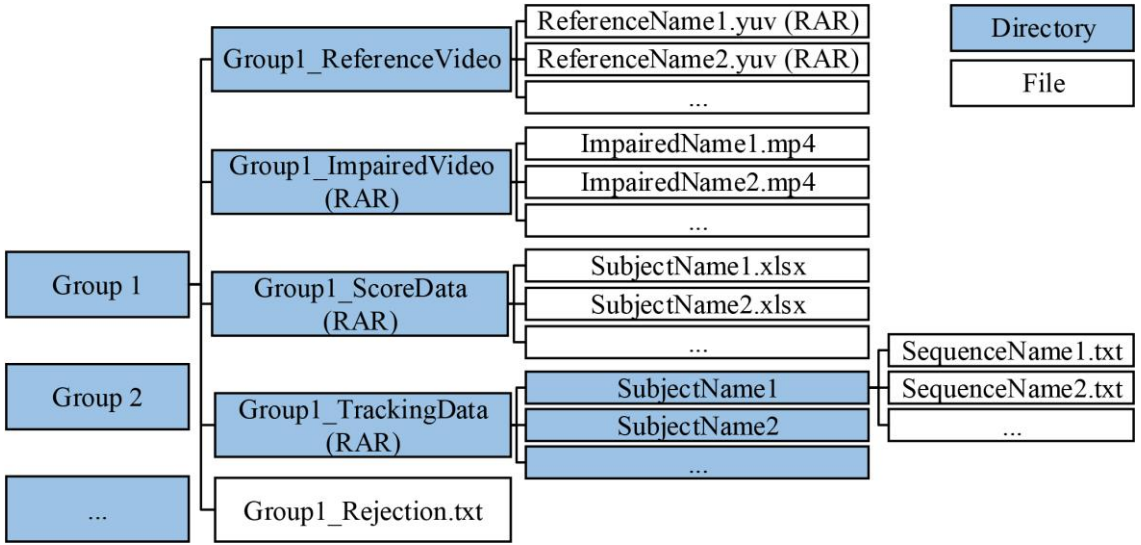
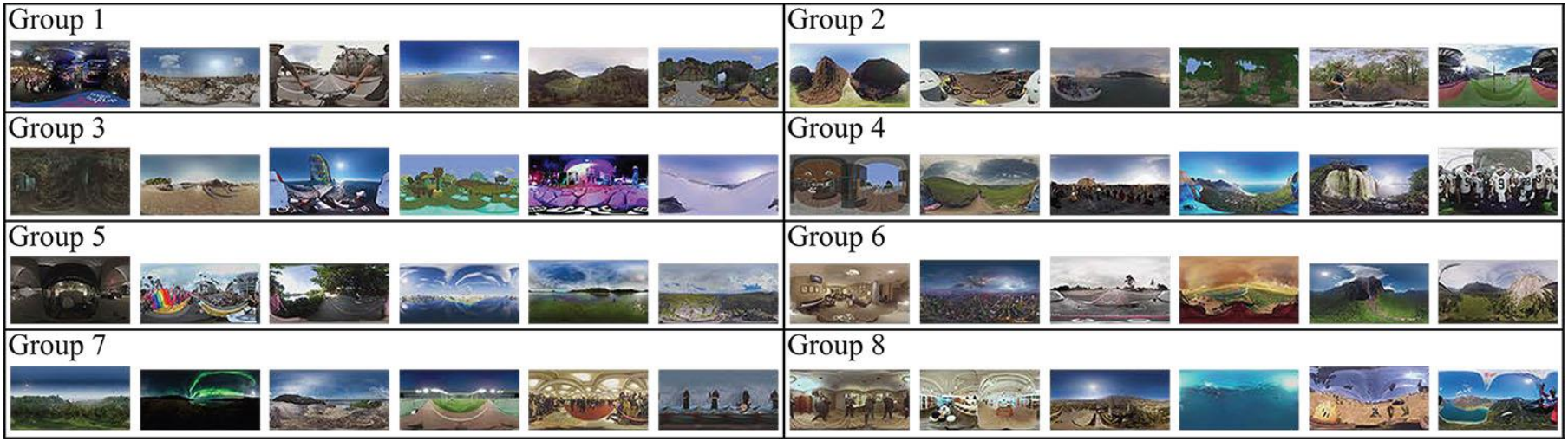
VQA-ODV Dataset

VQA-ODV

- large-scale dataset of omnidirectional video for visual quality assessment
- 600 omnidirectional video
- 60 reference video
- 540 impaired video





Sample of reference sequence in daraset.

Advantage of VQA-ODV

- Including both subjective scores and HM\EM data to study their relation

DATASET ESTABLISHMENT

- Reference sequences
  - 12 sequences in raw format\ 48 sequences from YouTube Virtual Reality Channel
  - bitrates are more than 15 Mbps
  - Resolution from 4K (3840 × 1920 pixels) to 8K (7680 × 3840 pixels)
  - equirectangular projection (ERP).
  - duration vary from 10 to 23 seconds
  - frame rate between 24-30 (fps)
- Impaired sequences
  - 3 compression levels and 3 kinds of projection(9 different impaired sequences)
  - Quantization parameter (QP) = 27, 37 and 42
  - ERP, reshaped cube map projection, truncated square pyramid projection

Subjective data collection

- Data collection:
  - The raw subjective quality scores of the sequences
  - The HM and EM data of subjects
- Subjective score:
  - S_ij: raw score of subject i assigns to sequence j
  - I_j: number of valid subjects viewing sequence j

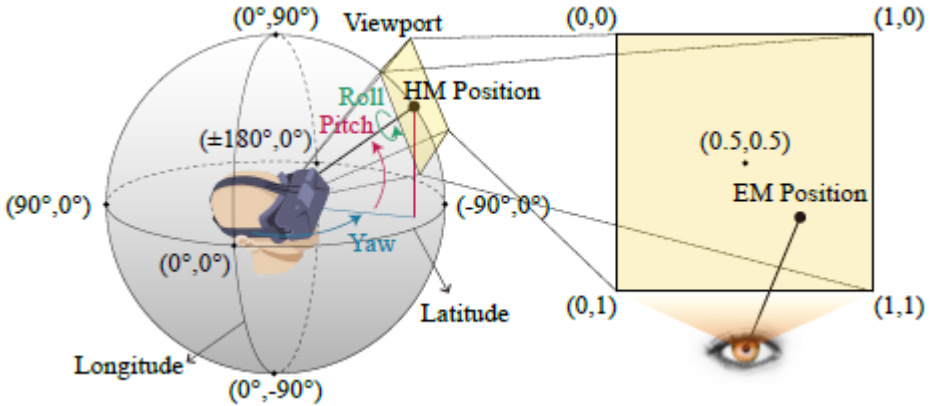
$$\mathrm{MOS}_j = \frac{1}{I_j} \sum_{i=1}^{I_j} S_{ij}$$

HM\EM Data

- [Timestamp HM_pitch HM_yaw HM_roll EM_x EM_y EM_flag]

time between two adjacent sample

=1 for validness and =0 for invalidness



References

- Chen Li, Mai Xu*, Xinzhe Du, Zulin Wang. 2018. Bridge the Gap Between VQA and Human Behavior on Omnidirectional Video: A Large-Scale Dataset and a Deep Learning Model. In 2018 ACM Multimedia Conference (MM ’18), October 22–26, 2018, Seoul, Republic of Korea.
- ACM, New York, NY, USA, 9 pages. https://doi.org/10.1145/3240508.3240581