Youtube UGC Dataset

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Google Inc

- https://media.withyoutube.com/
- 1500 20s. raw Creative Commons videos
- 15 categories
- Resolutions 360 to 4k

Animation

Cover Song

Gaming

News Clip

Lecture

Live Music

Lyric Video

Music Video

Sports

Television Clip

Vlog

Vertical

How To

VR

HDR
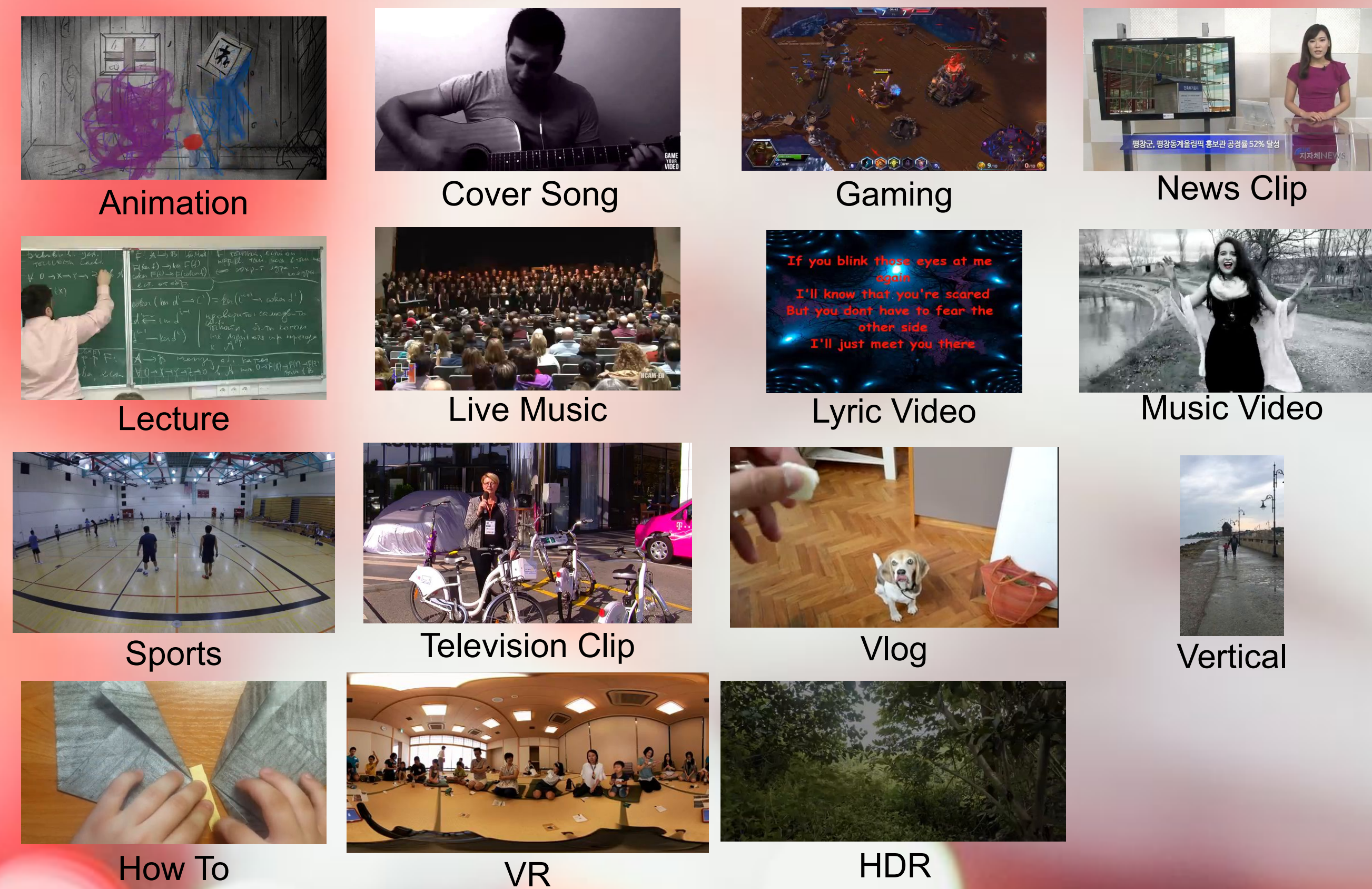
Challenges with User Generated Content (UGC)

Non-pristine uploaded version

Initial Raw Video
- pristine
- huge Size

Uploaded Version
- non-pristine (e.g. blurred)
- small size

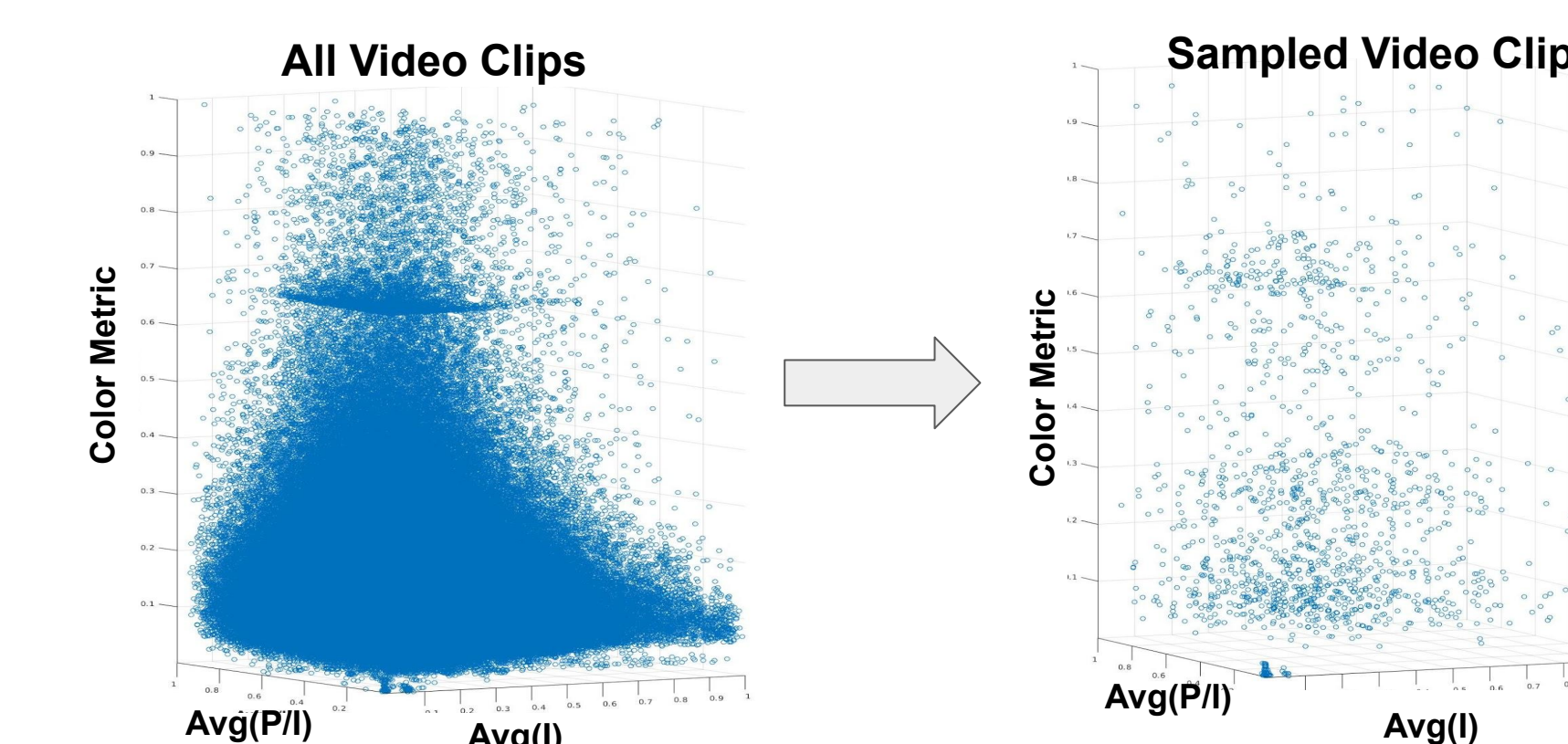**Misleading reference metrics**

Original

Transcoded

PSNR = 29.02, SSIM = 0.86, VMAF = 58.15

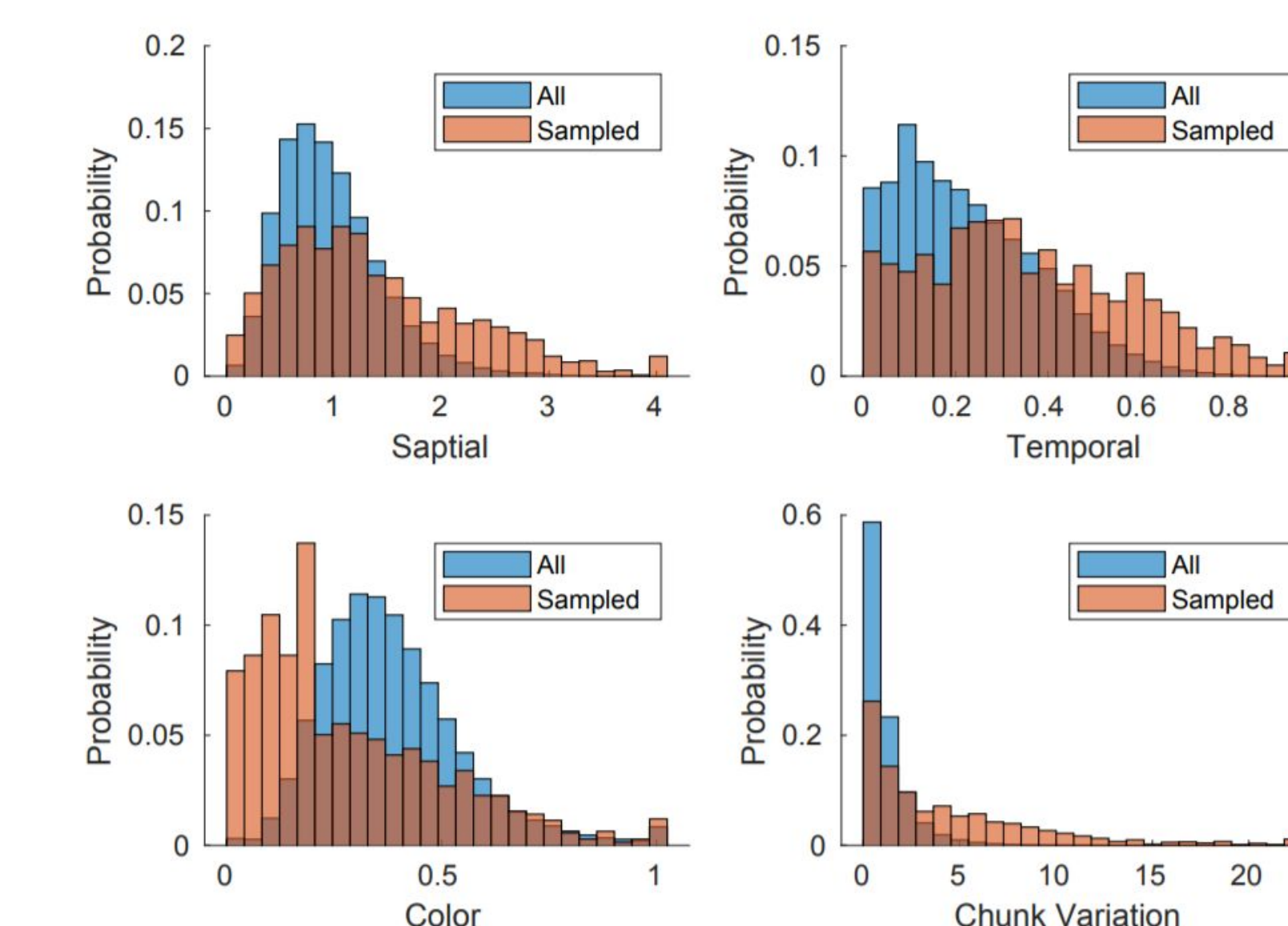Banding = 0.10, Noise = 0.12, **SLEEQ = 0.21**   Banding = 0.10, Noise = 0.12, **SLEEQ = 0.18**

Dataset Selection

Gaming   Animation   Music Video   Vlog

360P   480P   720P

Models

20s

(b) Spatial = 4.17

(d) Temporal = 1.03

(e) Color = 0.00

(h) Chunk Variation = 22.26

$$\text{size}(I_{frame})/(\text{width} * \text{height})$$

$$\text{size}(P_{frame})/\text{size}(I_{frame})$$

$$\frac{\text{SSE}(U_{plane}) + \text{SSE}(V_{plane})}{\text{SSE}(Y_{plane})}$$

$$\text{std}(\text{bitrate})$$

Coverage

All Video Clips

Sampled Video Clips

84% of the input samples covered

No-reference Metrics

Noise   Banding   SLEEQ