AVrate Voyager: an open source online testing platform

Steve Göring, Rakesh Rao Ramachandra Rao, Stephan Fremerey, Alexander Raake

Audiovisual Technology Group,
Technische Universität Ilmenau, Germany;
Email: [steve.goering, rakesh-rao.ramachandra-rao, stephan.fremerey,
alexander.raake]@tu-ilmenau.de

Code: `https://bit.ly/3uEyPNI`
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Motivation

▶ subjective testing required for quality assessment and research [16]

▶ usual tool: **lab-based tests**

    ○ controlled environment, e.g. ITU-R BT.500-13 [10], ITU-T Rec. P.913/910 [9, 23]

    ○ ensuring highly reliable results

    ○ not always possible

       ▷ non-accessibility of lab rooms or rooms not usuable, e.g. disallowed (e.g. COVID-19)

▶ crowdsourcing or online tests as alternative:

    ○ audio [14, 13], video [20, 2, 6, 18, 25, 28] or image quality assessment [8, 7, 3, 24].

    → How to implement such an online/crowd test?

AVRate Voyager: Our Framework
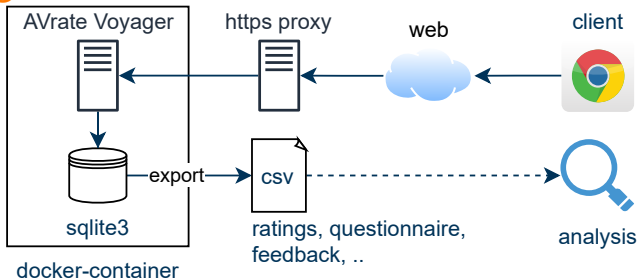
- ▶ based on AVRateNG
  - ○ usable for video, audio and othe lab tests [21, 17, 5, 19, 4, 22, 11, 15, 1, 26, 27, 12]
  - ○ similar tests possible for AVrate Voyager

- ▶ online/crowd nature requires adaption of test design

- ▶ scalable web technology (HTML5, CSS, bootstrap, docker)

- ▶ usable for: audio, image, and video tests or surveys

AVRate Voyager: Procedure
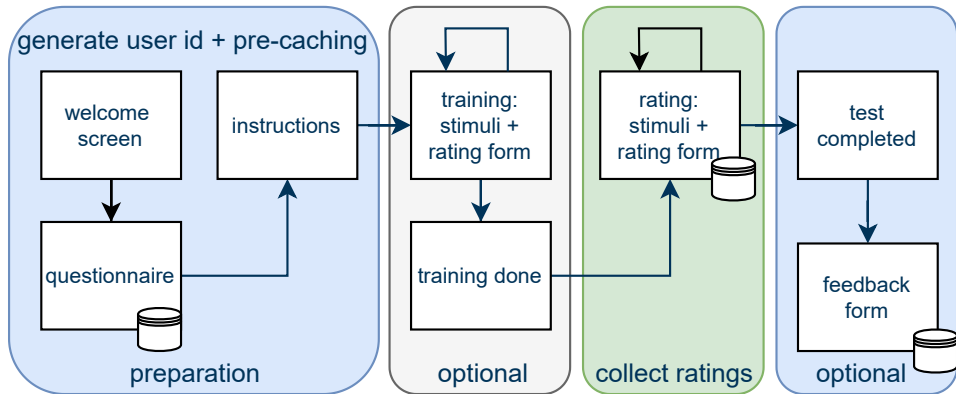
- ▶ configuration similar to AVRateNG (json file)
- ▶ adaption of templates required

Test instances – images

image quality test

- ▶ proof of concept; comparison to lab tests

- ▶ 1484 full-hd sized square image patches (195 MB)

- ▶ each participant rated 150 images (20 MB)

- ▶ ACR rating scheme; 15 minutes

- ▶ 238 participants: 35700 ratings

    $\rightarrow$ 720-1080p max resolution for participants

Test instances – video

video quality, see *Rao, Göring, and Raake* [20] (QoMEX '21)

- ▶ 540p center crop, comparison to lab test

- ▶ 30 videos per user (70 MB), 180 in total (433 MB)

- ▶ ACR rating scheme; 15 minutes

- ▶ 175 participants: 4390 ratings

    $\rightarrow$ requirement for pre-caching

Test instances – audio mixed

spaciousness of music, see *Stirnat and Göring* [29]

▶ replacement for a lab tests, small scale

▶ 41 stimuli (97 MB): 6 audio-only, 5 video-only, and 30 mixed

▶ multiple sliders for rating; 60 minutes

$\rightarrow$ window size per stimuli, play stimuli several times

Conclusion, Summary and Future Work

- overview of AVRate Voyager
  - typical instantiation
  - included procedure

- example tests briefly shown

- open and next steps:
  - include other multimedia formats
  - extend the framework

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Thank you for your attention

...... are there any questions?