

# Statistics of the user study in the paper entitled “Video Recoloring via Spatial-Temporal Geometric Palettes”

## I. STATISTICS OF THE USER STUDY

We performed a user study to evaluate our palette extraction and recoloring algorithm as well as its GUI interface. We invited 16 participants, 7 male and 9 female, aged between 21 and 26. We asked the participants to perform four video recoloring tasks. Two tasks were guided with specific recoloring goals: make the video BUILDING look old, and make the seasons more distinct in the video SEASONS. The other two tasks were open-ended. We asked participants to freely edit two given videos however they like. Prior to the recoloring tasks, we provided a tutorial and a trial stage for participants to learn to use our tool. After participants completed all tasks, they responded to a questionnaire surveying our palette extraction accuracy, recoloring quality, and user experience.

In Table I, we provide the statistics of questionnaire surveying in the user study. The feedbacks to 13 questions are collected. For each question, we provide the number of participants giving specific scores, including 1: very dissatisfied, 2: dissatisfied, 3: neutral, 4: satisfied, 5: very satisfied, and the average score of all participants.

TABLE I  
STATISTICS OF QUESTIONNAIRE SURVEYING IN THE USER STUDY. FOR EACH QUESTION, WE PROVIDE THE NUMBER OF PARTICIPANTS GIVING SPECIFIC SCORES, INCLUDING 1: VERY DISSATISFIED, 2: DISSATISFIED, 3: NEUTRAL, 4: SATISFIED, 5: VERY SATISFIED, AND THE AVERAGE SCORE OF ALL PARTICIPANTS.

Questions	1	2	3	4	5	average score
Q1: I think the user interface layout is simple and clear	0	0	0	3	13	4.80
Q2: I think the tool is easy to operate and easy to use, and it is easy to complete the recoloring task according to my thought	0	0	3	5	8	4.27
Q3: I think the color palette extracted by the algorithm can reflect the color distribution of the video?	1	0	1	9	5	4.07
Q4: I think I can easily achieve the color effects I like.	0	1	1	12	2	3.93
Q5: I think the video after editing with tools is artifacts-free	0	2	5	7	2	3.60
Q6: I think the effect of video recoloring is natural	0	1	1	11	3	4.00
Q7: I think the result of the video recoloring is in line with my expectations	0	0	1	12	3	4.13
Q8: I think the real-time performance of the tool is very good, there are no lags and unevenness.	0	0	2	3	11	4.53
Q9: I think the RGB 3D polyhedron corresponding to each frame displayed by the system can help me adjust the color well.	0	0	8	6	2	3.67
Q10: I hope to be able to use this tool to complete recolor task in the future	0	0	3	3	10	4.40
Q11: I think this system can meet my daily video recoloring needs like other professional art design software.	0	1	3	5	7	4.20
Q12: In terms of video color recoloring, I prefer this tool to other professional tools	0	0	5	6	5	4.07
Q13: I would recommend this tool to others	0	0	1	6	9	4.47