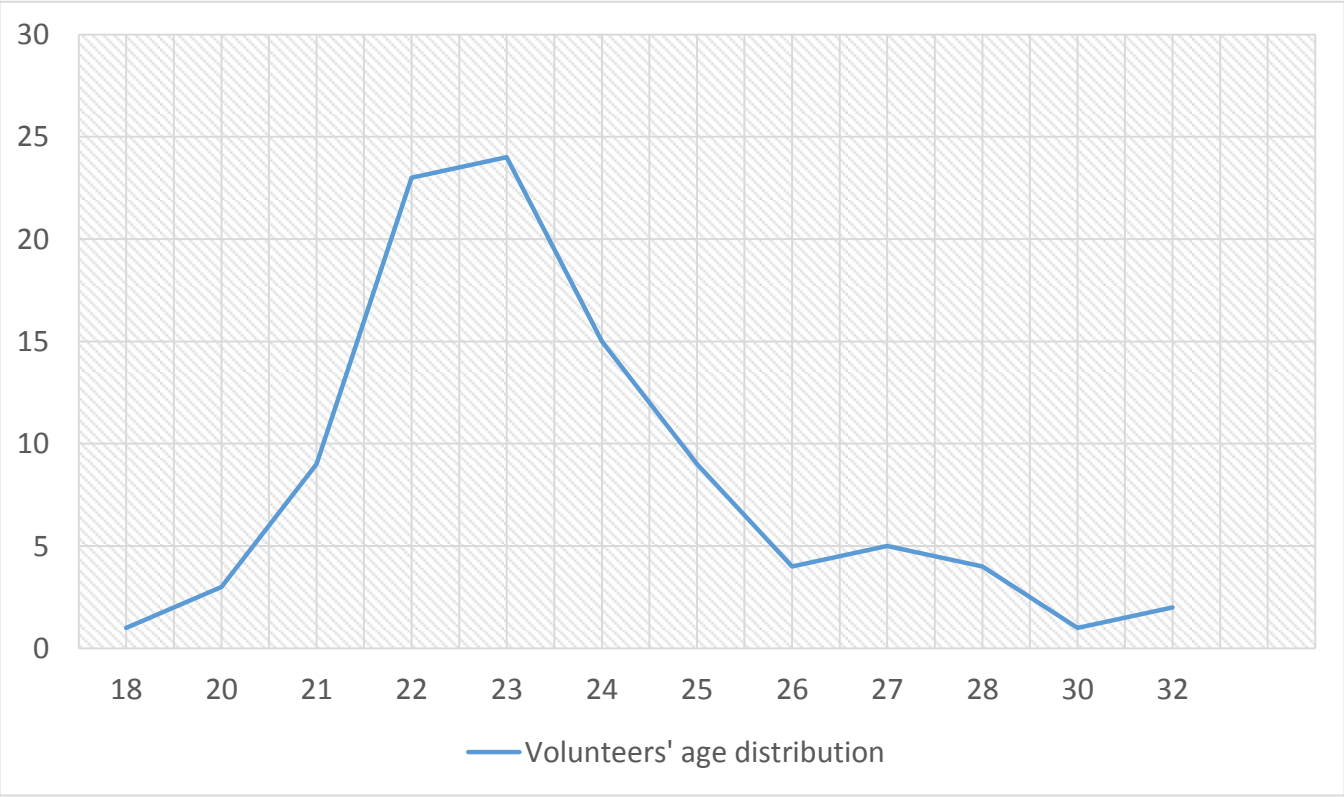
Stereoscopic Hallucinations

User Study

Data

- Participants: **100 volunteers (including 42 females and 58 males)**, who have normal stereo vision. The age range is between 18 to 32, the plot below shows the distribution of volunteers' ages.



Data

- A total of **80 images**, including ***30 NYU V2 images, 30 Make3D images and 20 images from our own dataset***. All images are randomly selected from the three datasets. All the test images shown each user are randomly selected.
- There are two parts in the user study:
  (1) **Part I** compares **16 anaglyph image pairs**. We request the users to choose the one creating a more convincing stereo effect.
  (2) **Part II** compares **8 parallax animation pairs**. We request the users to choose the one that better conveys the 3D structure of the scene.

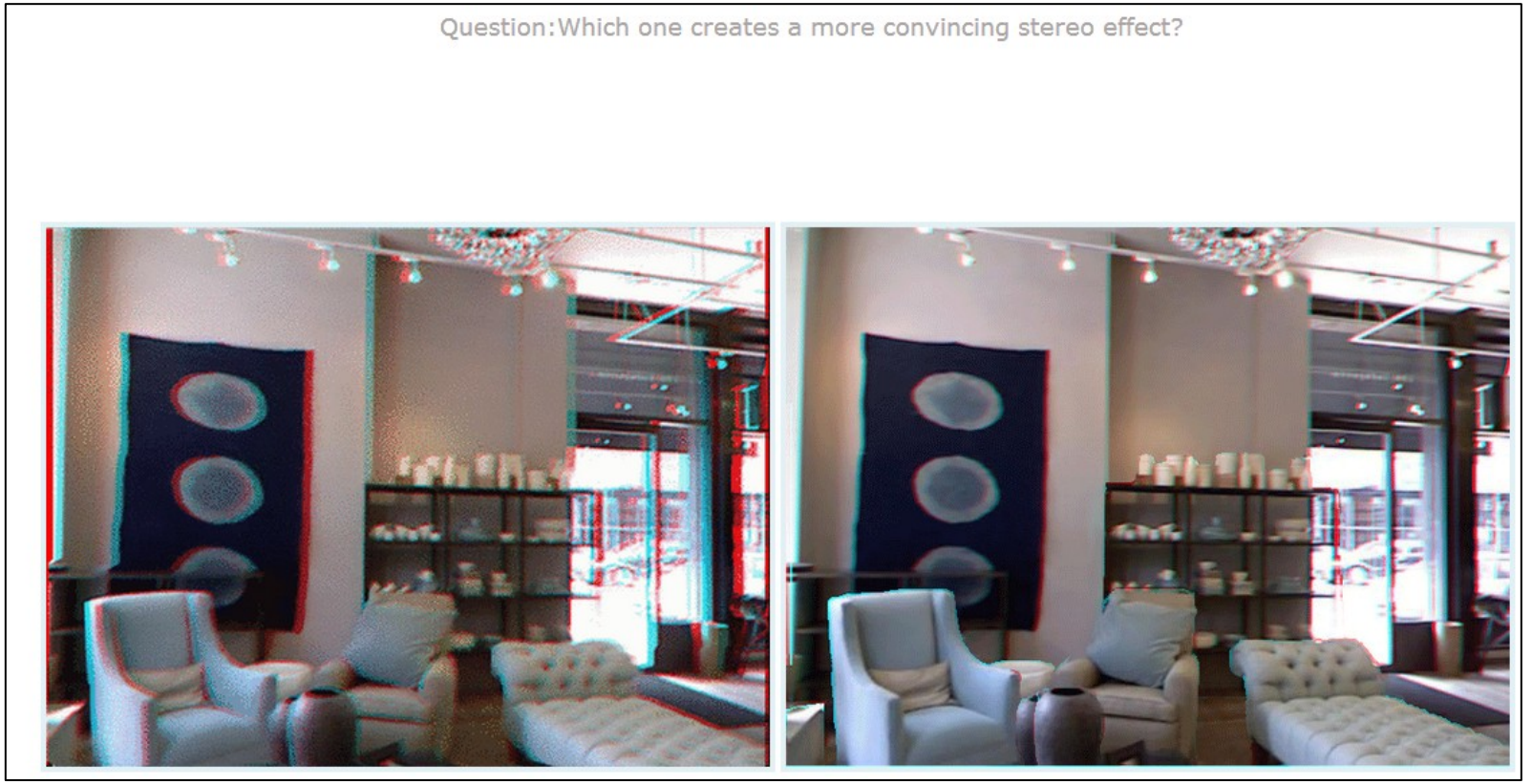
Data Per Participant

PART I	Ground Truth	[Russell & Torralba, CVPR09]	[Karsch et al., ECCV 12]
NYU V2 depth dataset	2	2	2
Make3D depth dataset	2	2	2
Our dataset	\	2	2

PART II	Ground Truth	[Russell & Torralba, CVPR09]	[Karsch et al., ECCV 12]
NYU V2 depth dataset	1	1	1
Make3D depth dataset	1	1	1
Our dataset	\	1	1

Anaglyph Comparison

- In each test page, we show two anaglyph results side-by-side. One of the anaglyphs is generated by our method. Below is the screenshot of one such comparison.



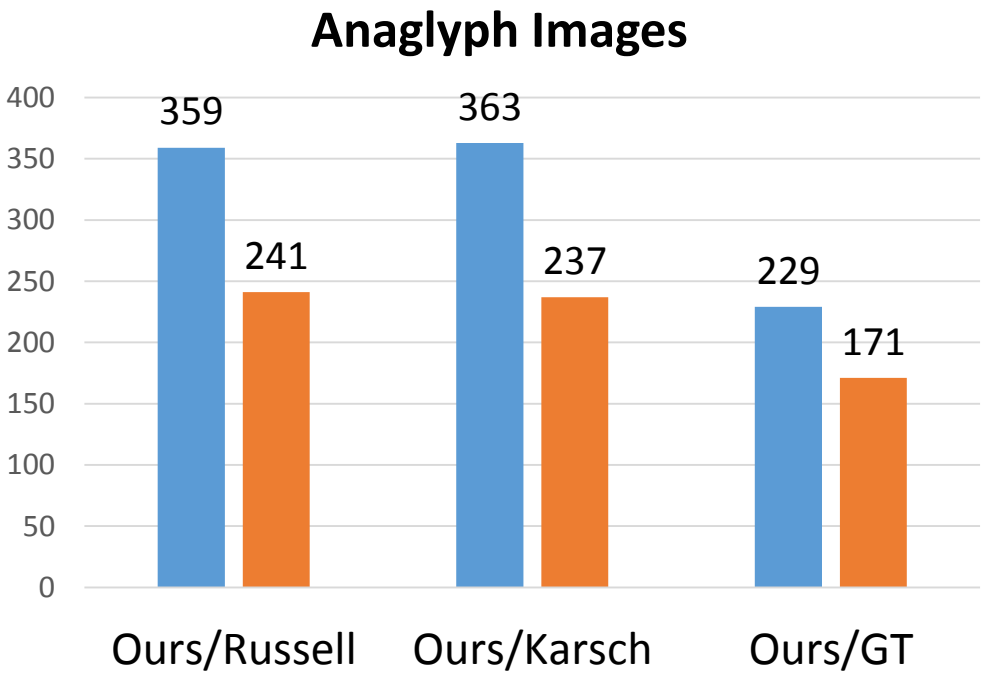
Parallax Animation Comparison

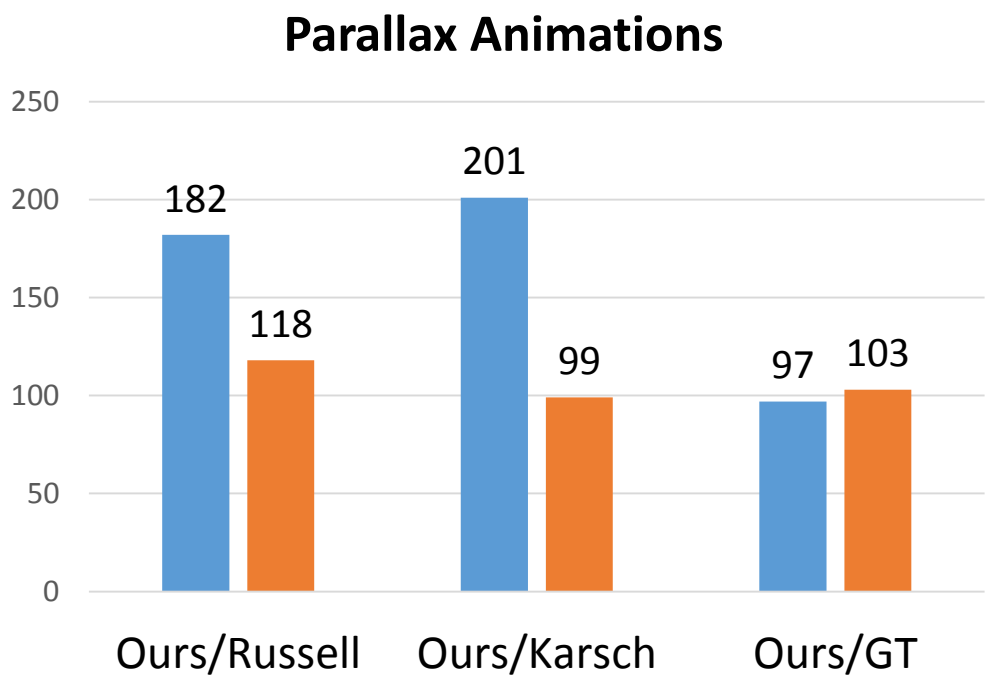
- In each test page, we show two animations side-by-side. One of them is generated by our method. Below is the screenshot of one such comparison.

Summary of Votes

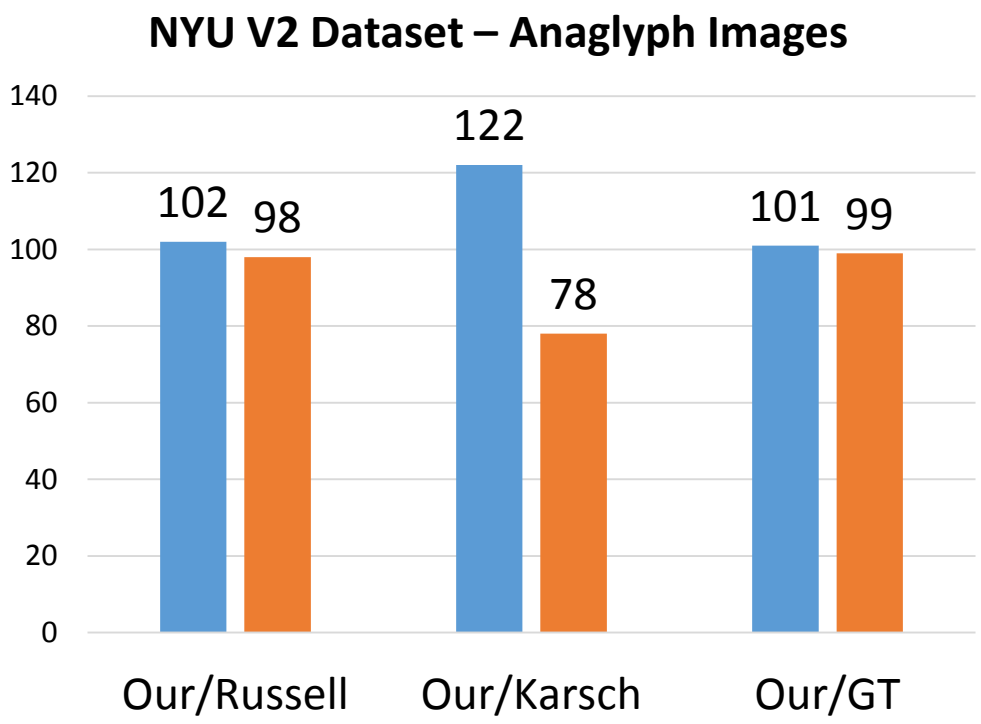
Order	Database	Comparisons	Part I Anaglyph Images	Part II Back-and-forth Video
1	NYU V2 Depth	Ours vs. Karsch	us:122 / 200	**us: 71/ 100**
2		Ours vs. GT	us:101/ 200	**us: 42 / 100**
3		Ours vs. Russell	us:102/ 200	us: 56/ **100**
4	Make 3D	Ours vs. GT	us: 128 / 200	**us: 55** / **100**
5		Ours vs. Russell	us: 119 / 200	us: 66 / **100**
6		Ours vs. Karsch	us: 109 / 200	us: 56 / **100**
7	Our dataset	Ours vs. Karsch	us: 132 /200	us: 74 / **100**
8		Ours vs. Russell	us:138 / 200	**us: 60 / 100**

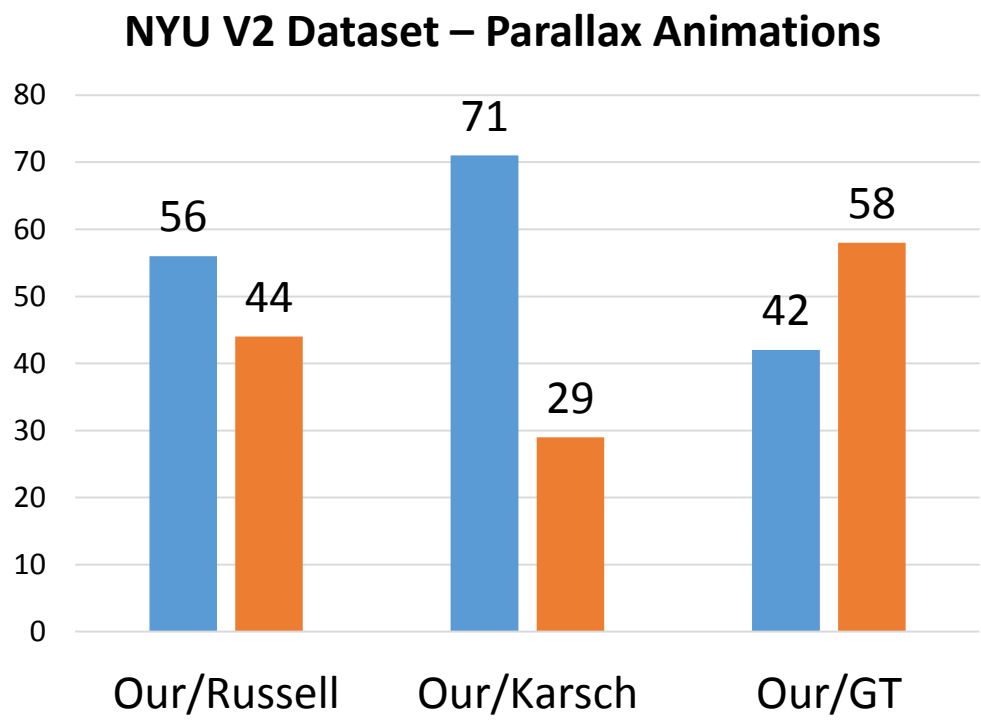
Summary of Votes



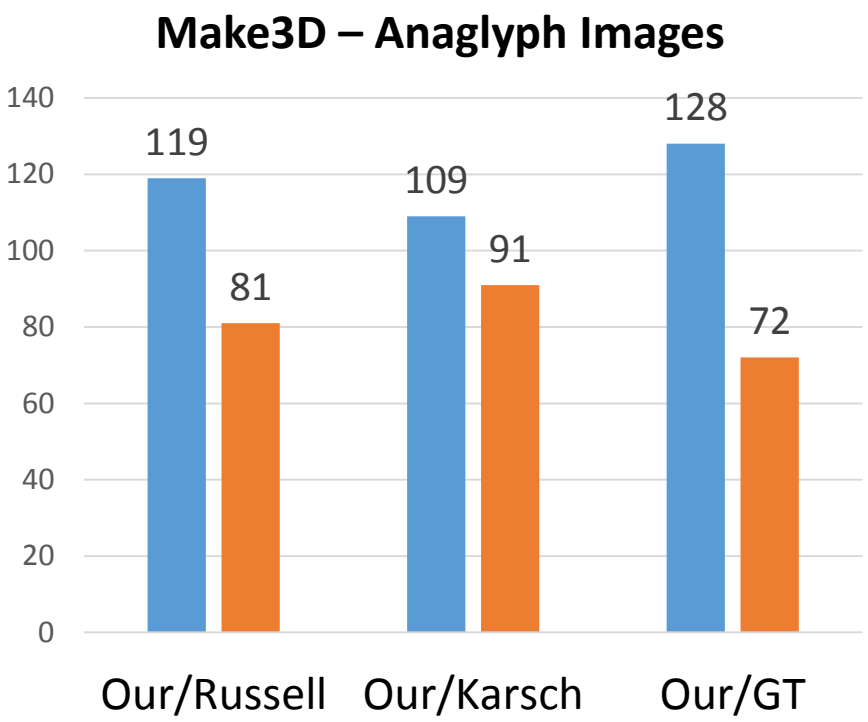


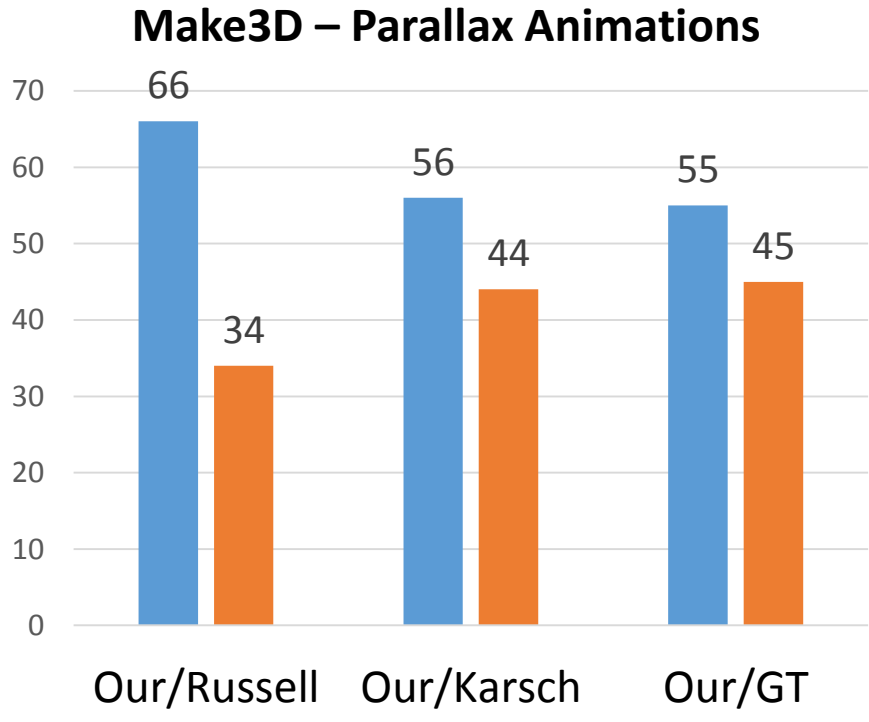
Votes for NYU V2 dataset



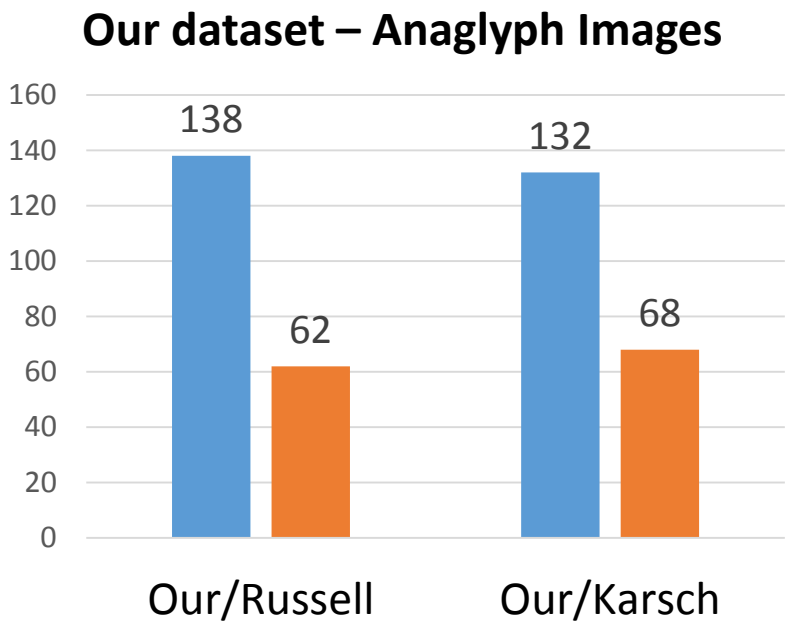


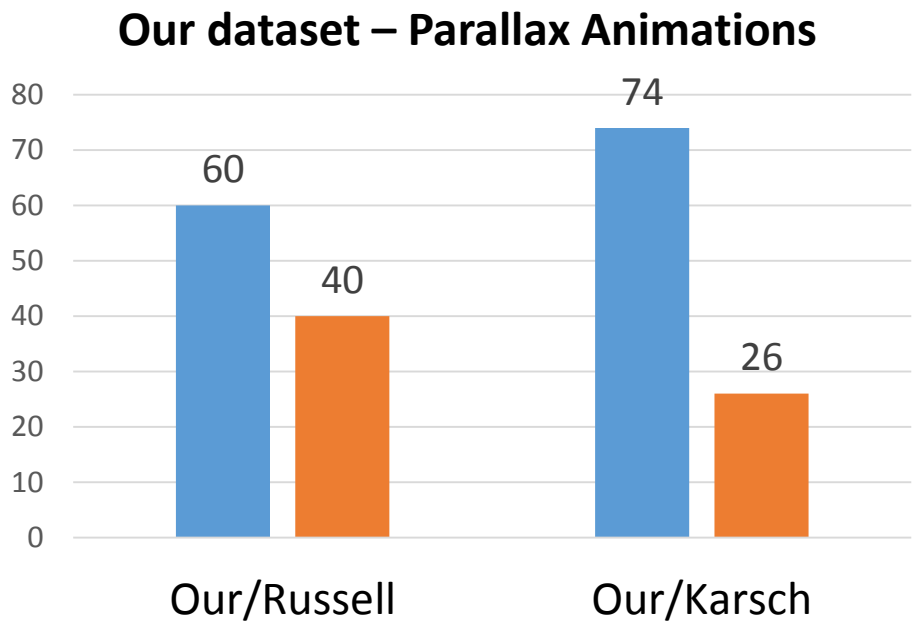
Votes for Make3D dataset

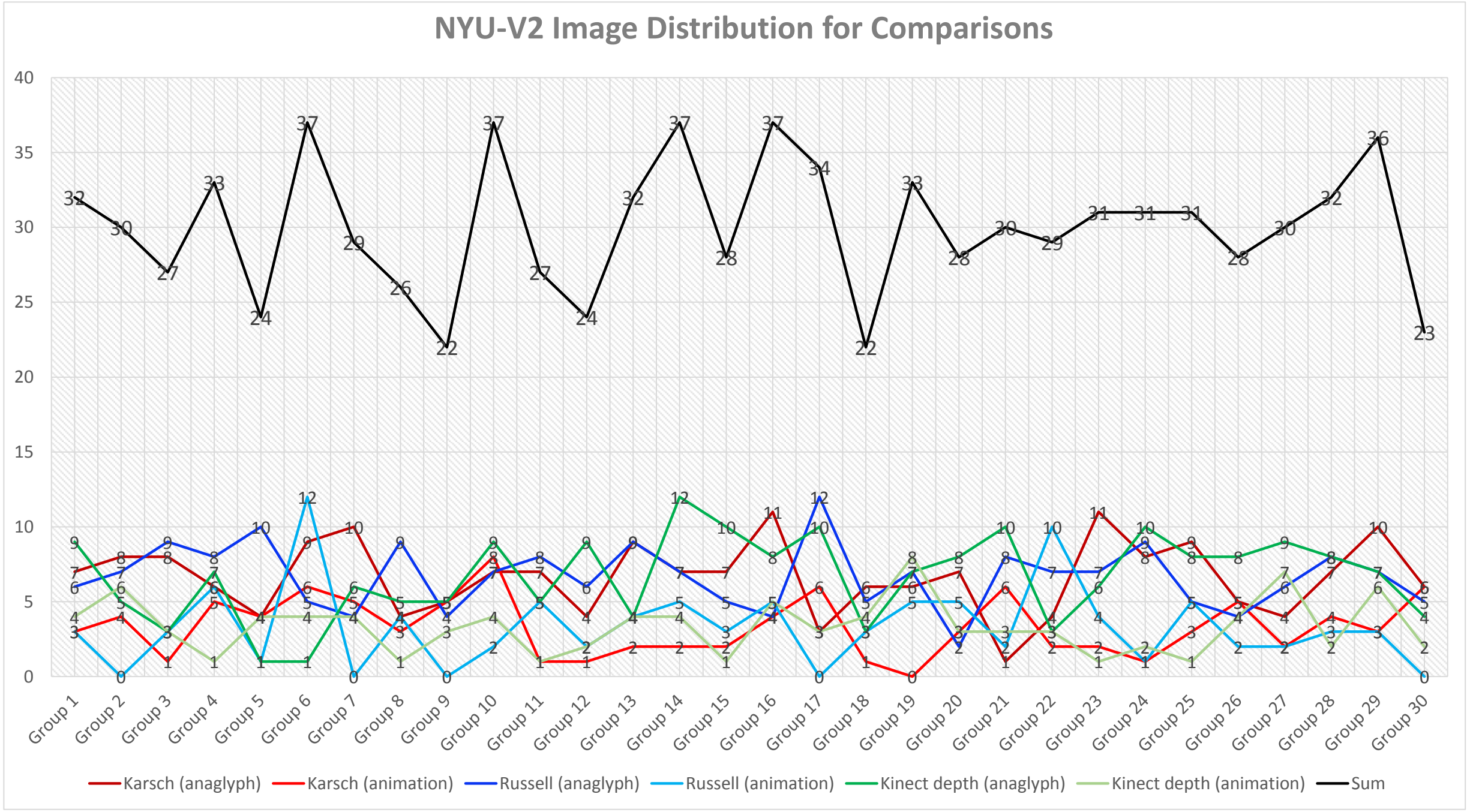


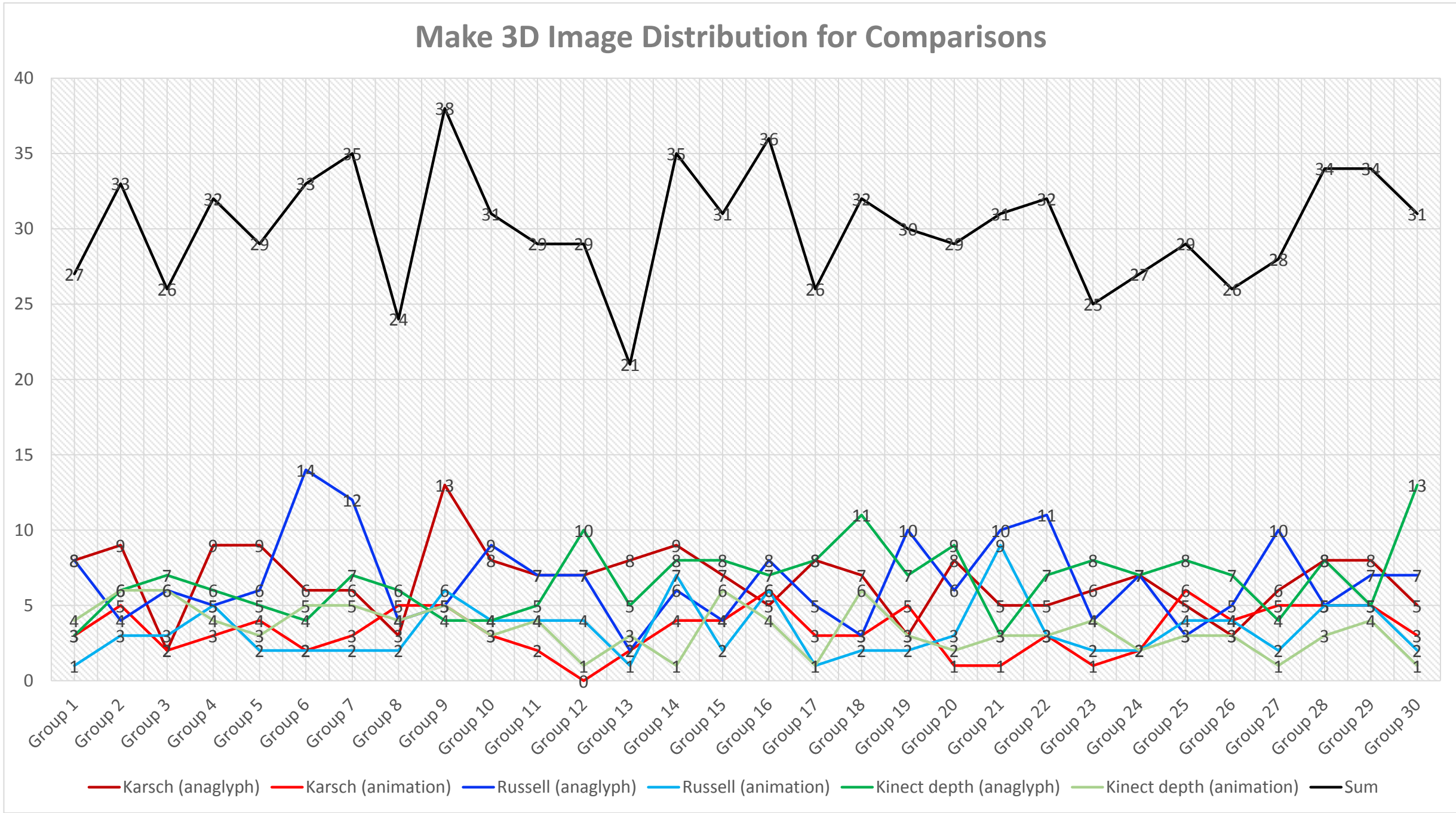


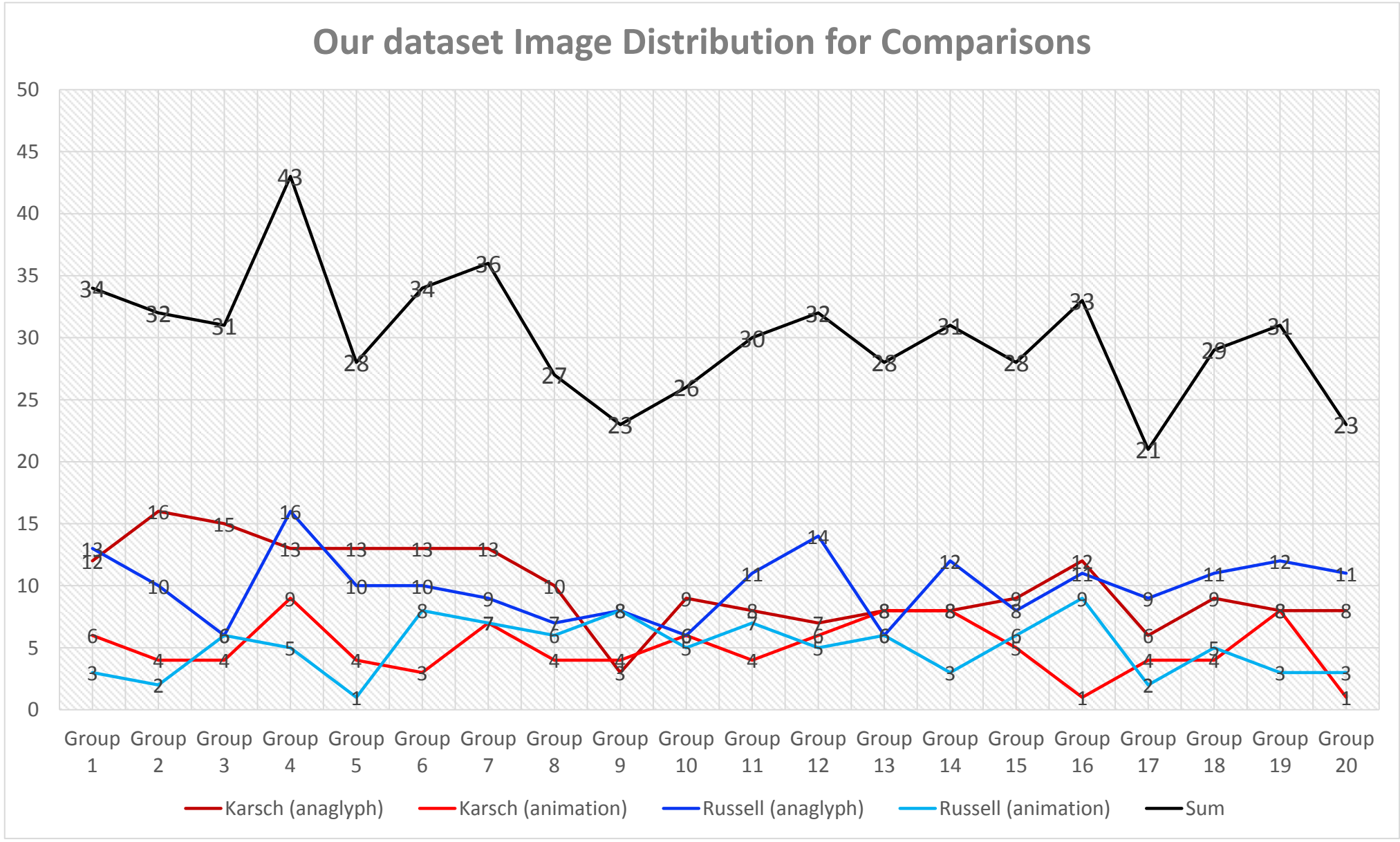
Votes for our dataset






NYU-V2 Image Distribution for Comparisons
40
35
30
25
20
15
10
5
0
Group 1
Group 2
Group 3
Group 4
Group 5
Group 6
Group 7
Group 8
Group 9
Group 10
Group 11
Group 12
Group 13
Group 14
Group 15
Group 16
Group 17
Group 18
Group 19
Group 20
Group 21
Group 22
Group 23
Group 24
Group 25
Group 26
Group 27
Group 28
Group 29
Group 30
Karsch (anaglyph)
Karsch (animation)
Russell (anaglyph)
Russell (animation)
Kinect depth (anaglyph)
Kinect depth (animation)
Sum


Make 3D Image Distribution for Comparisons
40
35
30
25
20
15
10
5
0
Group 1
Group 2
Group 3
Group 4
Group 5
Group 6
Group 7
Group 8
Group 9
Group 10
Group 11
Group 12
Group 13
Group 14
Group 15
Group 16
Group 17
Group 18
Group 19
Group 20
Group 21
Group 22
Group 23
Group 24
Group 25
Group 26
Group 27
Group 28
Group 29
Group 30
Karsch (anaglyph)
Karsch (animation)
Russell (anaglyph)
Russell (animation)
Kinect depth (anaglyph)
Kinect depth (animation)
Sum


Our dataset Image Distribution for Comparisons
50
45
40
35
30
25
20
15
10
5
0
Group 1
Group 2
Group 3
Group 4
Group 5
Group 6
Group 7
Group 8
Group 9
Group 10
Group 11
Group 12
Group 13
Group 14
Group 15
Group 16
Group 17
Group 18
Group 19
Group 20
Karsch (anaglyph)
Karsch (animation)
Russell (anaglyph)
Russell (animation)
Sum

Thank you!