

Feedback - Immersive 3D Multilayer Graph

Application: 3dmultilayer.emanum.dev

Thank you for trying out the visualization! We would love to hear your feedback in this survey. If you have any questions please contact our team:

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Overview and Clarity

How good was your overview during the exploration?

	1	2	3	4	5	
bad	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	good

Was the hierarhical nesting of the nodes understandable?

	1	2	3	4	5	
no	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	yes

How would you classify the clarity (visual clutter, occlusion of elements, ...) of the visualization?

	1	2	3	4	5	
bad	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	good

How useful or distracting was the automatic filtering of the visible links?

	1	2	3	4	5	
distracting	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	useful

How useful or distracting was the manual filtering of the visible links by the virtual laser pointer?

	1	2	3	4	5	
distracting	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	useful

How was the aesthetics? Were the nodes and links easily detectable?

	1	2	3	4	5	
no	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	yes

Please describe your experience during the exploration? Were there some aspects that were hard to understand? (filtering, nesting, clarity, ...)

The experience was slightly overwhelming. I was not able to make any sense of the dataset or gain any specific insight.

While the hierarchical approach helped to see the grouping of nodes, I did not experience a better overview than without hierarchical clustering.

I did not experience or notice any automatic filtering (pressing the menu button on the left controller did not have any effect), therefore I am not able to evaluate that aspect.

Were there some positive aspects about the visualization that you didn't see anywhere else and found useful? What helped you the most to understand the structure of the graph?

The node jumping via the pointer was useful for navigation.

I was having a hard time understanding the structure of the graph.

Are there any other tools you used so far to visualize large hierarchical graphs? If yes, what was the name of the tool and how would you compare it against our visualization?

No

VR - Navigation and Interaction

Did you experience the VR application in a seated, standing or in a room scale environment?

- ☐ Seated
- ☐ Standing
- ☒ Room scale - small space available (1-2 steps in every direction possible)
- ☐ Room scale - medium space available (2-3 steps in every direction possible)
- ☐ Room scale - large space available (4+ steps in every direction possible)
- ☐ only browser based without VR headset

Did you have problems with motion sickness?

not at all 1 2 3 4 5 yes strong problems

☐ ☒ ☐ ☐ ☐

If you experienced motion sickness, what interaction was problematic?

Teleportation animation (too slow)

How many minutes approximatly did you try out the visualization?

5 minutes

How often did you use free flying for navigation?

	1	2	3	4	5	
never	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	very often

How often did you use teleporting with the laser pointer for navigation?

	1	2	3	4	5	
never	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	very often

How often did you use rotation with the controller buttons for navigation?

	1	2	3	4	5	
never	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	very often

If you used a room scale environment: How useful was the physical movement for navigation?

	1	2	3	4	5	
not useful	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	very useful

How often did you use manual scaling with the controller buttons for navigation?

	1	2	3	4	5	
never	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	very often

What were your preferred navigation methods? Anything that could be improved?

I'd have preferred the free fly camera, but the movement was rather unintuitive - looking at a node slightly down and holding forward on the touchpad did not bring me closer to the target but the camera moved up.

The teleportation animation was rather slow, which induced motion sickness, increasing that speed might help.

Did you experiment with different scaled of the scene by manually changing the scaling with the controller? What was your preferred scale? Large room size nodes or small soccer ball size nodes? Did you experience any difference for the clarity and overview?

I've only looked at room sized nodes when within the hierarchy.

How easy was the virtual laser pointer to use?

	1	2	3	4	5	
hard	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	easy

Did you have any problems with the laser pointer or navigation methods?

Performance

What System did you use for the visualization? (CPU, GPU, VR Headset)

Intel(R) Core(TM) i7-10750H CPU @ 2.60GHz, 2592 Mhz, 6 Core(s), 12 Logical Processor(s)
NVIDIA GeForce RTX 2080 Super
HTC Vive Pro

Did you have any technical problems?

No

How was your overall performance? Was the visualization smooth enough that you could use it without being distracted? What datasets did you use?

Medium Dataset, had no visible issues

Resume

How was your overall experience?

bad 1 2 3 4 5 good

☐ ☐ ☒ ☐ ☐

Do you have any additional feedback?

There was z-fighting on a few distant spheres and the font on the spheres had visible scaling artifacts

What would you adapt? Change Button Mappings? Adapt flyspeed / scaling? Change duration of teleport? Change visible links? Add / remove navigations/ interactions?

Change the free fly camera to something more intuitive

Could you imagine to use the visualization when its in a finished and more polished state? Do you have any specific application purpose in mind?

I don't do graph analysis, so no.

Optional: your name or contact email

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