

Supplementary Materials: Virtual Agent Positioning Driven by Personal Characteristics

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1 VISUALIZATION OF SOME RESULTS

Figure 1 shows a scene with 5 agents and the results of virtual agent relocation generated by 3 methods: our approach, POSA and the professional approach respectively. The specific analysis is as follows:

In this study, we conducted experiments involving five agents experiencing a given scenario. Subsequently, we employed three distinct methods to reposition the agents in another similar scene based on their positions and poses within the original scenario. These methods comprised a professional approach, our proposed method, and the POSA method.

Upon analysis, it becomes evident that both our proposed method and the professional approach demonstrate reasonably distributed relationships and poses among the original agents within the new scene. Conversely, the POSA method, while ensuring individual agents' poses are realistic within the scene, fails to capture the interrelations among the agents. For instance, it overlooks the strong association between the woman in yellow attire and the man in brown attire.

Comparing our proposed method with the professional approach, we find that while the professional method emphasizes the semantic relevance between agents and the scene, our method exhibits

greater efficiency in terms of time. Despite this efficiency, it is crucial to acknowledge that the professional method tends to prioritize the semantic coherence between agents and the scene.

In conclusion, our experiments demonstrate that while our proposed method offers efficiency in agent positioning, the professional method excels in preserving semantic relationships between agents and the scene. Future research could focus on refining our method to incorporate semantic considerations without compromising efficiency.

Figure 2 shows all the scenes in our experiment, which reflects the diversity of scenarios. Figure 3 shows all the virtual agents in our experiment, which reflects the diversity of characters.

2 DETAILED RATING RESULTS

Tables 1 and 2 respectively show the ratings of each of the 30 users on the comfort of the single position and the rationality of the overall position.

REFERENCES



(a) Five agents in the initial scene



(b) Results generated by professional approach



(c) Results generated by our approach



(d) Results generated by POSA

Figure 1: An example of a scenario with 5 agent



Figure 2: All scene in our experiment



Figure 3: All virtual agent in our experiment

Table 1: Reasonable rating for solo poses.

| name | ours | professional | POSA |
|------|------|--------------|------|
| p1 | 3 | 4 | 2 |
| p2 | 4 | 4 | 3 |
| p3 | 3 | 4 | 3 |
| p4 | 4 | 5 | 4 |
| p5 | 4 | 5 | 3 |
| p6 | 5 | 4 | 4 |
| p7 | 4 | 3 | 4 |
| p8 | 4 | 5 | 3 |
| p9 | 3 | 4 | 2 |
| p10 | 4 | 3 | 1 |
| p11 | 5 | 5 | 2 |
| p12 | 5 | 4 | 3 |
| p13 | 3 | 4 | 2 |
| p14 | 2 | 3 | 1 |
| p15 | 4 | 5 | 3 |
| p16 | 3 | 4 | 2 |
| p17 | 3 | 2 | 3 |
| p18 | 4 | 5 | 3 |
| p19 | 4 | 5 | 3 |
| p20 | 5 | 5 | 3 |
| p21 | 3 | 3 | 2 |
| p22 | 4 | 4 | 4 |
| p23 | 4 | 4 | 3 |
| p24 | 2 | 3 | 2 |
| p25 | 3 | 4 | 3 |
| p26 | 4 | 5 | 2 |
| p27 | 3 | 4 | 3 |
| p28 | 5 | 5 | 3 |
| p29 | 4 | 4 | 1 |
| p30 | 4 | 4 | 2 |

Table 2: Multiplayer overall positioning rating.

| name | ours | professional | POSA |
|------|------|--------------|------|
| p1 | 4 | 4 | 1 |
| p2 | 4 | 5 | 2 |
| p3 | 5 | 5 | 3 |
| p4 | 3 | 5 | 3 |
| p5 | 4 | 5 | 4 |
| p6 | 5 | 5 | 3 |
| p7 | 4 | 4 | 3 |
| p8 | 5 | 5 | 3 |
| p9 | 4 | 4 | 1 |
| p10 | 3 | 4 | 1 |
| p11 | 4 | 4 | 2 |
| p12 | 5 | 4 | 2 |
| p13 | 3 | 3 | 2 |
| p14 | 3 | 4 | 2 |
| p15 | 3 | 5 | 2 |
| p16 | 4 | 4 | 3 |
| p17 | 5 | 4 | 4 |
| p18 | 4 | 4 | 3 |
| p19 | 3 | 4 | 3 |
| p20 | 4 | 4 | 3 |
| p21 | 4 | 5 | 3 |
| p22 | 4 | 3 | 3 |
| p23 | 4 | 4 | 2 |
| p24 | 3 | 4 | 3 |
| p25 | 3 | 3 | 4 |
| p26 | 4 | 5 | 3 |
| p27 | 4 | 4 | 2 |
| p28 | 4 | 5 | 3 |
| p29 | 5 | 3 | 2 |
| p30 | 3 | 4 | 3 |