Supplementary Material for DyCrowd: Towards Dynamic Crowd Reconstruction from a Large-scene Video

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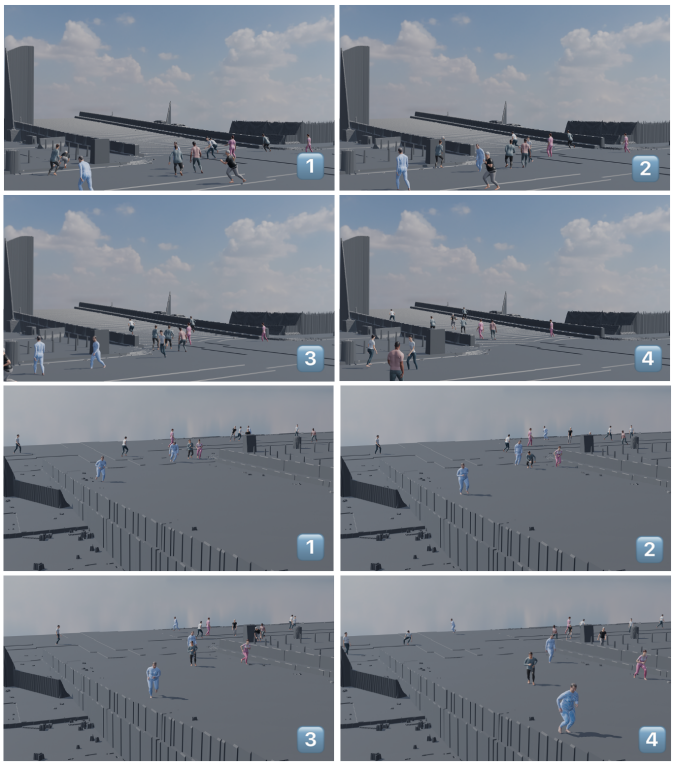

Fig. 1. Sample frames from the two demo videos featuring the sloped scene and crowds.

I. Extended Dataset

Since DyCrowd primarily focuses on crowd reconstruction in typical flat outdoor scenes, we have used the original *VirtualCrowd* dataset for validation. To support future research in more complex scenarios (as shown in Figure 1), we have created two extended datasets that include more complex sloped scenes and personalized human motions. These extended datasets have been designed to provide additional data support for future studies and to promote the development of related methods. The extended data used simulation techniques from [1] to acquire trajectories through specific sloped scenes [2] and generated personalized human skeleton motions based on these trajectories. These skeletons drove the SMPL model, producing SMPL motion sequences that interacted realistically with the environment. Finally, two sloped scene videos, each with different perspectives and crowd distributions, have been rendered using Blender, along with the corresponding data labels.

References

[1] X. Liu, T. Zhou, H. Kang, J. Ma, Z. Wang, J. Huang, W. Weng, Y.-K. Lai, and K. Li, "RESCUE: Crowd evacuation simulation via controlling sdm-united characters," in *2025 International Conference on Computer Vision (ICCV)*, 2025.

[2] Y. Li, L. Jiang, L. Xu, Y. Xiangli, Z. Wang, D. Lin, and B. Dai, "Matrixcity: A large-scale city dataset for city-scale neural rendering and beyond," in *Proceedings of the IEEE/CVF International Conference on Computer Vision*, 2023, pp. 3205–3215.