Supplementary for HOI Analysis: Integrating and Decomposing Human-Object Interaction

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1 Visualized Results

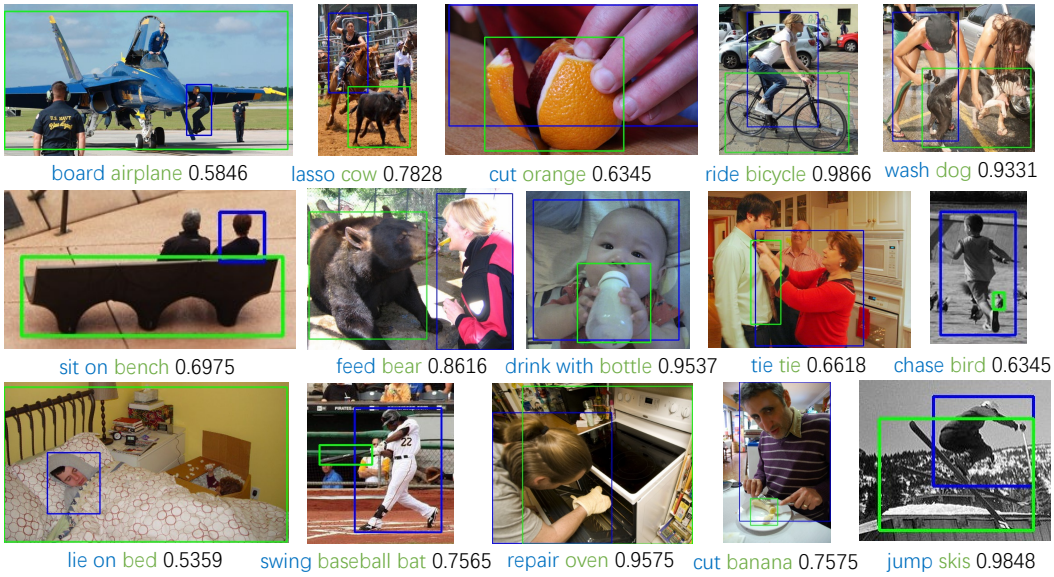

Figure 1: Some HOI detection results on HICO-DET [1].

We visualize some HOI detection results of our IDN on HICO-DET [1] in Fig. 1. As shown, IDN is able to decompose and integrate various HOIs in diverse scenes and accurately detect them.

2 Result Analysis

We illustrate the detailed comparison between our method, Peyre *et al.* [3] and DJ-RN [2] on Rare set on HICO-DET [1] in Fig. 2. We can find that our IDN outperforms Peyre *et al.* [3] and DJ-RN [2] on various rare HOIs. The effectiveness of our IDN on Rare set proves that the dynamically learned interaction representation can greatly alleviate the data deficiency of the rare HOIs.

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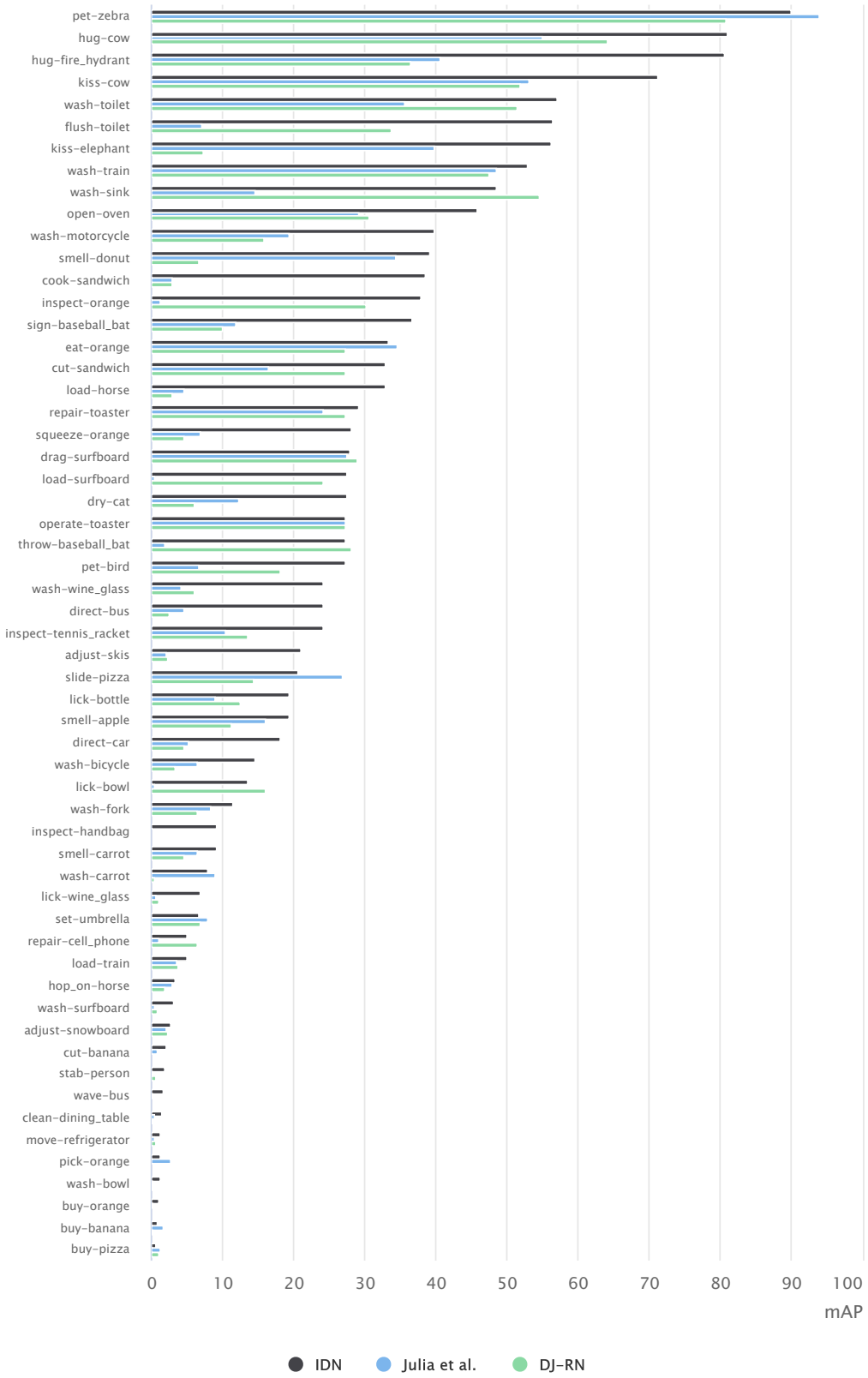

Figure 2: Performance comparison between our method, Peyre *et al*. [3] and DJ-RN [2] on Rare set of HICO-DET [1].

3 Code

We provide our source code in `https://github.com/DirtyHarryLYL/HAKE-Action-Torch/tree/IDN-(Integrating-Decomposing-Network)` under our project HAKE-Action-Torch (`https://github.com/DirtyHarryLYL/HAKE-Action-Torch`).

References

[1] Yu-Wei Chao, Yunfan Liu, Xieyang Liu, Huayi Zeng, and Jia Deng. Learning to detect human-object interactions. In *WACV*, 2018.

[2] Yong-Lu Li, Xinpeng Liu, Han Lu, Shiyi Wang, Junqi Liu, Jiefeng Li, and Cewu Lu. Detailed 2d-3d joint representation for human-object interaction. In *CVPR*, 2020.

[3] Julia Peyre, Ivan Laptev, Cordelia Schmid, and Josef Sivic. Detecting rare visual relations using analogies. In *ICCV*, 2019.