REVERIE: Remote Embodied Visual Referring Expressions in Real Indoor Environments

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The REVERIE Task

Go to the bathroom in the bedroom with an orange stripe. Make sure the faucet is not leaking.
## Results on the REVERIE Task Using MAttNet as Pointer

| Methods       | Val Seen Navigation Acc. | Val UnSeen Navigation Acc. | Test (Unseen) Navigation Acc. |
|---------------|--------------------------|-----------------------------|-------------------------------|
|               | Succ. | OSucc. | SPL | Length | Succ. | OSucc. | SPL | Length | Succ. | OSucc. | SPL | Length |
| Random        | 2.74  | 8.92   | 1.91 | 11.99  | 1.97  | 1.76  | 11.93 | 1.01 | 10.76  | 0.96  | 2.30  | 8.88 | 1.44 | 10.34 | 1.18 |
| Shortest      | 100   | 100    | 100  | 10.46  | 68.45 | 100   | 100   | 100  | 9.47   | 56.63 | 100   | 100  | 100  | 9.39  | 48.98 |
| R2R-TF [1]    | 7.38  | 10.75  | 6.40 | 11.19  | 4.22  | 3.21  | 4.94  | 2.80 | 11.22  | 2.02  | 3.94  | 6.40 | 3.30 | 10.07 | 2.32 |
| R2R-SF [1]    | 29.59 | 35.70  | 24.01| 12.88  | 18.97 | 4.20  | 8.07  | 2.84 | 11.07  | 2.16  | 3.99  | 6.88 | 3.09 | 10.89 | 2.00 |
| RCM [28]      | 23.33 | 29.44  | 21.82| 10.70  | 16.23 | 9.29  | 14.23 | 6.97 | 11.98  | 4.89  | 7.84  | 11.68| 6.67 | 10.60 | 3.67 |
| SelfMonitor [19] | 41.25 | 43.29  | 39.61| 7.54   | 30.07 | 8.15  | 11.28 | 6.44 | 9.07   | 4.54  | 5.80  | 8.39 | 4.53 | 9.23  | 3.10 |
| FAST-Short [14] | 45.12 | 49.68  | 40.18| 13.22  | 31.41 | 10.08 | 20.48 | 6.17 | 29.70  | 6.24  | 14.18 | 23.36| 8.74 | 30.69 | 7.07 |
| FAST-Lan-Only | 8.36  | 23.61  | 3.67 | 49.43  | 5.97  | 9.37  | 29.76 | 3.65 | 45.03  | 5.00  | 8.15  | 28.45| 2.88 | 46.19 | 4.34 |
| Ours          | 50.53 | 55.17  | 45.50| 16.35  | 31.97 | 14.40 | 28.20 | 7.19 | 45.28  | 7.84  | 19.88 | 30.63| 11.61| 39.05 | 11.28|
| Human         | –     | –      | –   | –      | –     | –     | –    | –   | –      | –     | 81.51 | 86.83| 53.66| 21.18 | 77.84|

**RGS** indicates the ratio of goal-set entries that correctly predicted as goal entries.
Take Home Message

Code and Dataset