Tryout Controller Generalization in Language-Grounded Navigation Benchmarks

Assignee Research

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Abstract

This report synthesises findings from 12 peer-reviewed papers addressing the following research question: Can the tryout controller mechanism in RxR-trained agents generalize to other language-grounded navigation benchmarks, such as Room-Across-Room (RxR), with measurable improvements in success rate and. We introduce Room-Across-Room (RxR), a new Vision-and-Language Navigation (VLN) dataset. RxR is multilingual (English, Hindi, and Telugu) and larger (more paths and instructions) than other VLN datasets. 10 claims were extracted from source literature; 0 were independently verified against retrieved documents. An automated multi-reviewer quality assessment produced a score of 2.5/10. This report is a machine-generated literature synthesis and does not constitute original research.

1 Introduction

This paper examines: Room-Across-Room: Multilingual Vision-and-Language Navigation with Dense Spatiotemporal Grounding. Research question: Can the tryout controller mechanism in RxR-trained agents generalize to other language-grounded navigation benchmarks, such as Room-Across-Room (RxR), with measurable improvements in success rate and path efficiency?.

2 Methodology

Systematic literature search across multiple databases yielded 12 papers. Claims were extracted from source material and verified against retrieved documents. An independent multi-reviewer assessment produced a quality score of 2.5/10.

3 Results

12 papers retrieved. 10 claims extracted; 0 independently verified. Quality review score: 2.5/10.

4 Limitations

This report is a machine-generated literature synthesis and does not constitute original research. Automated retrieval and verification may introduce errors or omissions. Review scores reflect automated assessment, not human peer review. Readers should consult primary sources for authoritative information.

5 Extracted Claims

Claim	Verified	Confidence
RxR contains 126K instructions covering 16.5K sampled guide paths and 126K human follower demonstration paths.	×	0.05
RxR includes instructions for three typologically diverse languages: English (en), Hindi (hi), and Telugu (te).	×	0.05
RxR's instructions are not translations: all instructions are created from scratch by native speakers.	×	0.02
RxR's English portion includes instructions by speakers in the USA (en-US) and India (en-IN).	×	0.03
RxR addresses shortcomings of existing VLN datasets, including multilinguality, scale, fine-grained word grounding, and	×	0.10
RxR addresses path biases in R2R.	×	0.05
RxR's multilingual agent obtains across the board improvements when trained on both R2R and RxR datasets.	×	0.06
The language-only agent is much better than random, but both modalities are required for best performance.	×	0.05
The multilingual agent outperforms the monolingual agents on the RxR test set.	×	0.07
The human performance on the RxR test set is significantly higher than the multilingual agent's performance.	×	0.04

References

- http://arxiv.org/abs/2305.16126v1
- http://arxiv.org/abs/2010.07954v1

- http://arxiv.org/abs/2206.11610v2