

Localising a Person with Multimodal Sensory Systems in a Smart House.



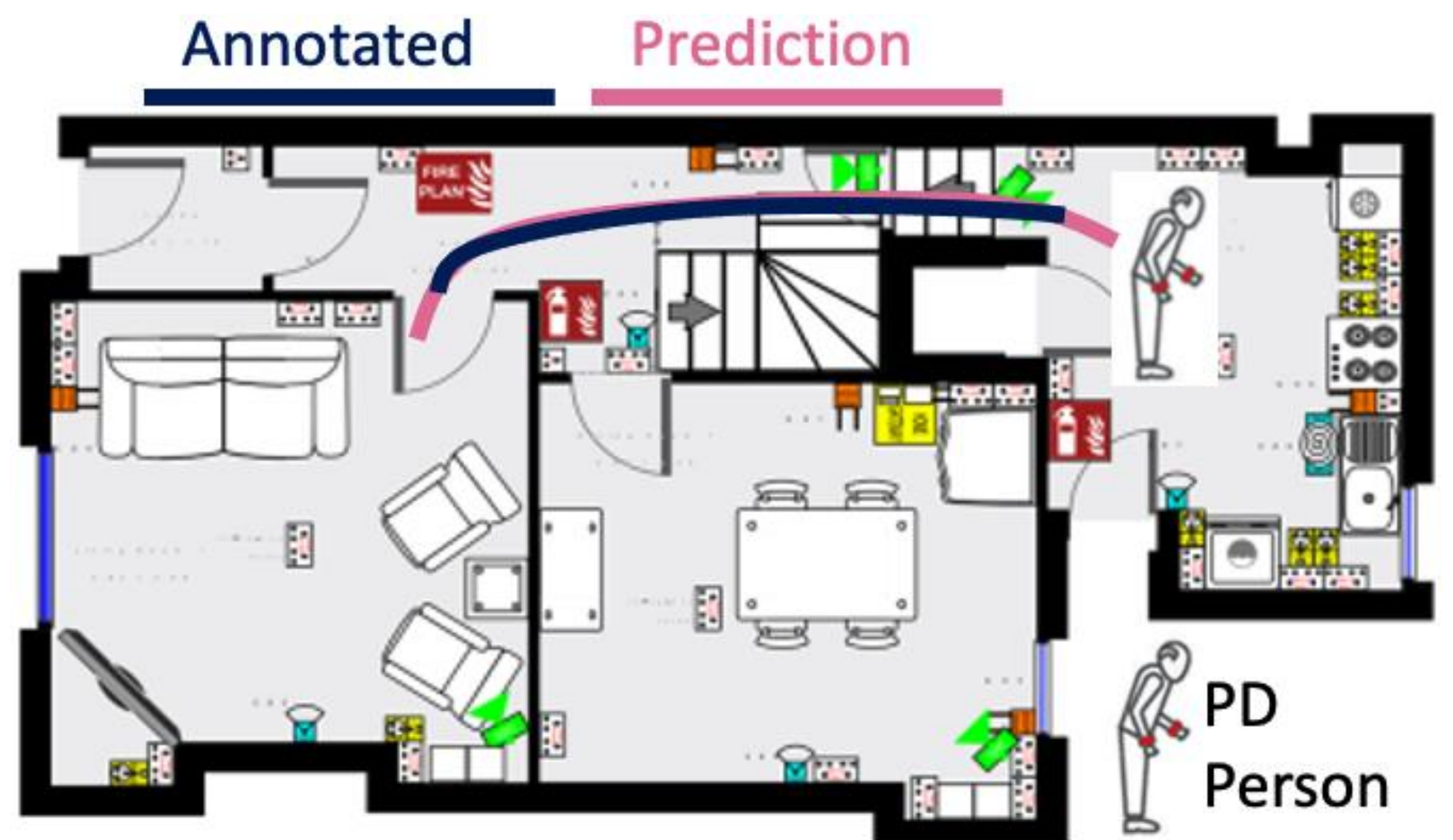
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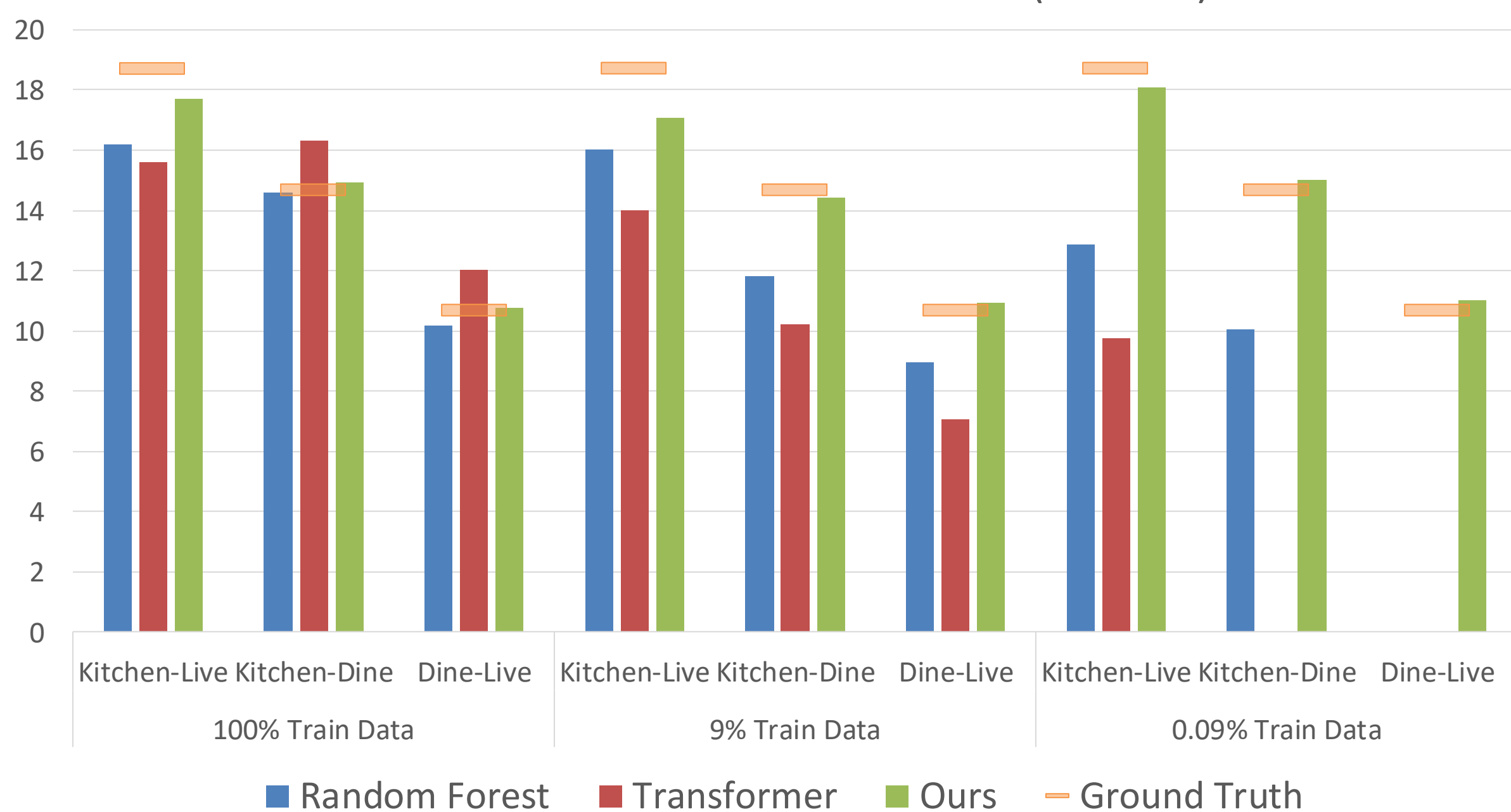
²⁾ Translational Health Sciences, Bristol Medical School, University of Bristol

1. Introduction

Indoor localisation, including its in-home mobility features, could be used to quantify how mobility behaviour changes as Parkinson's disease (PD) progresses. These in-home mobility features obtained through accurate indoor localisation predictions can also be used to effectively classify whether a person with PD is taking their medications or withholding them.



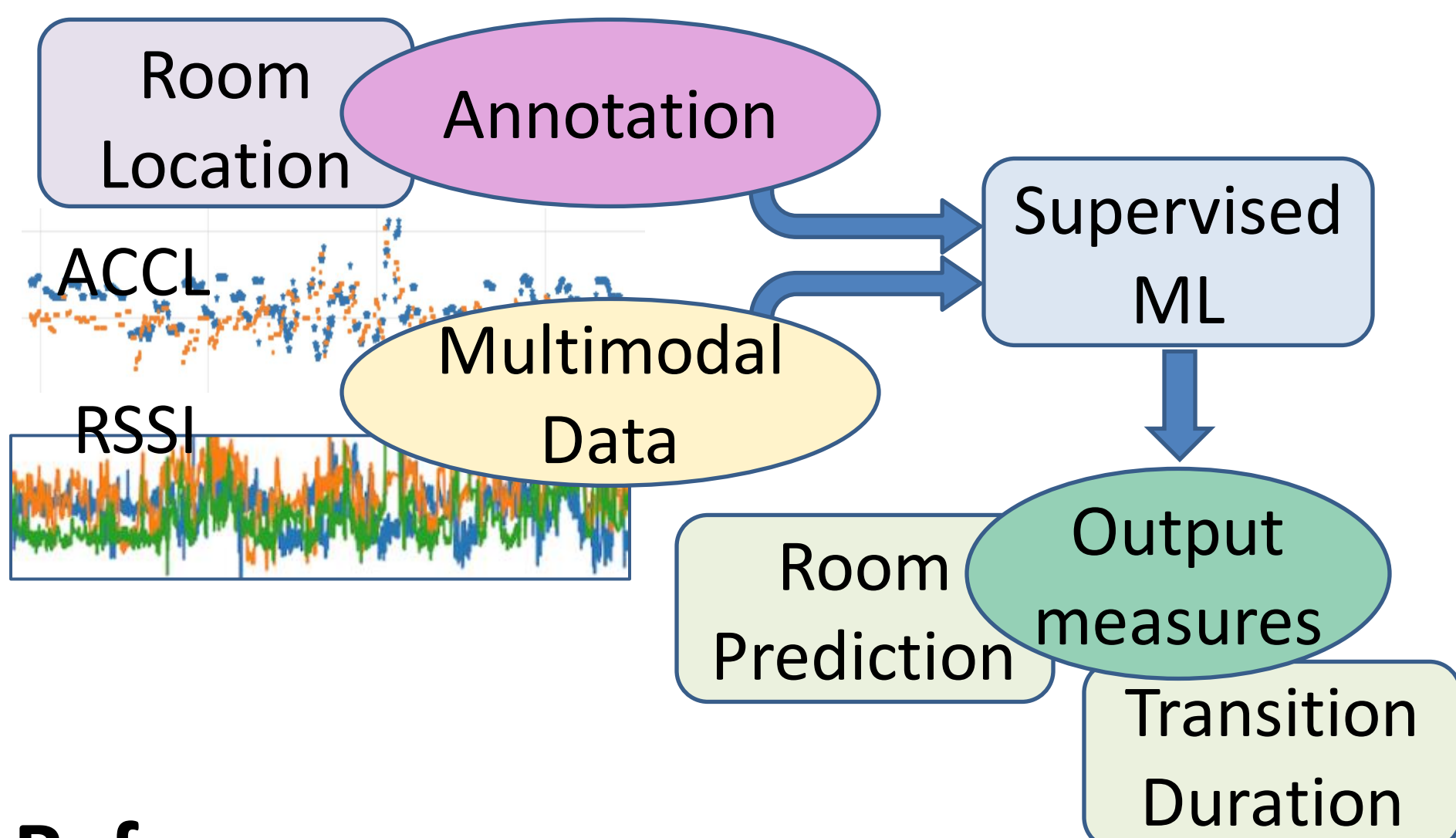
Room-to-Room Transition Duration (seconds)



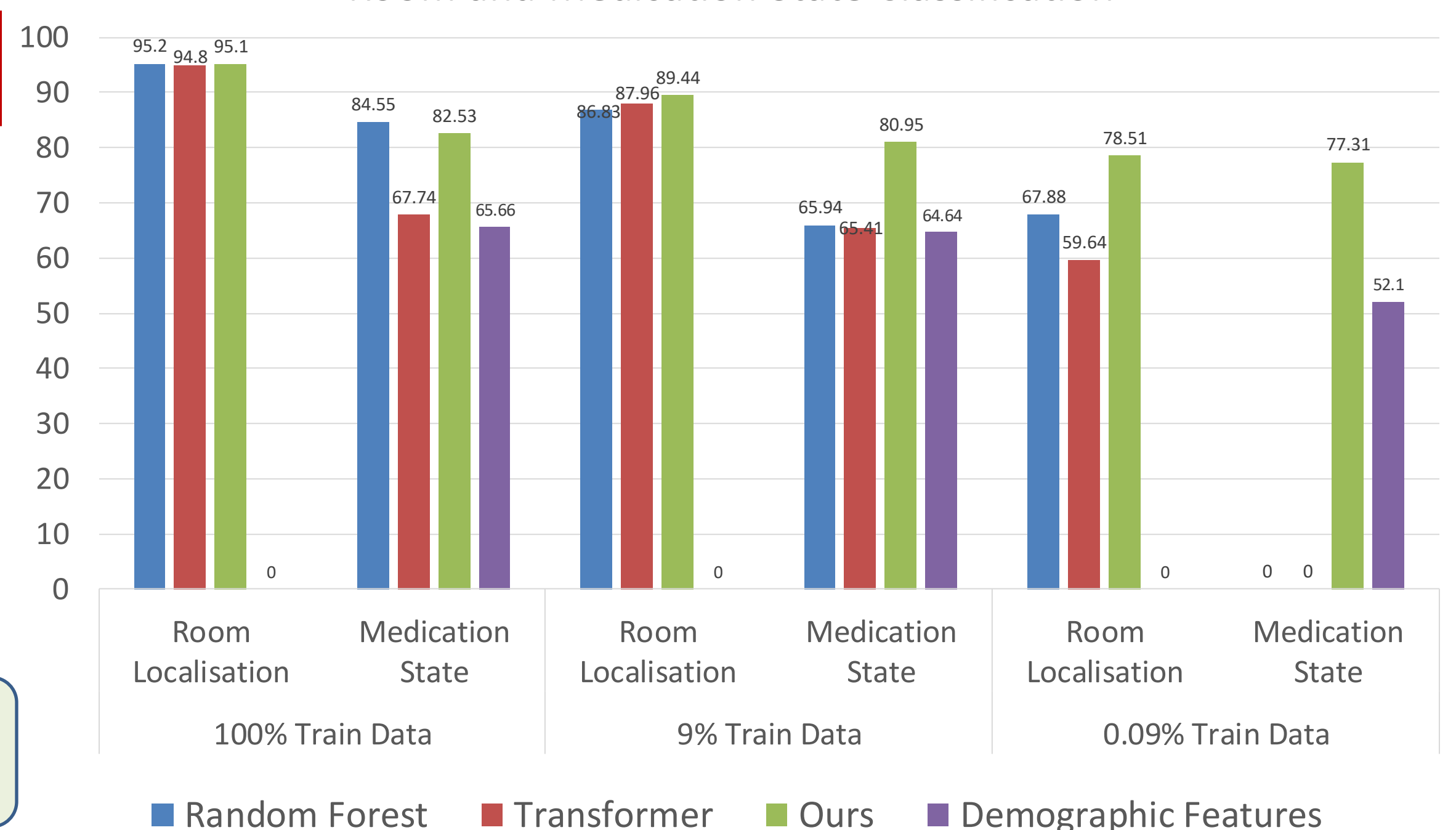
2. In-home Mobility Features

An accurate indoor localisation is needed to produce high quality in-home mobility features. The quality can be measured by how close the room-to-room transition duration is to the ground truth.

Indoor Localisation Framework



Room and Medication State Classification



References

- [1] Jovan, F., McConville, R., Morgan, C., Tonkin, E., Whone, A., & Craddock, I. (2022). Multimodal Indoor Localisation for Measuring Mobility in Parkinson's Disease using Transformers. arXiv preprint arXiv:2205.06142.
- [2] Jovan, F., McConville, R., Morgan, C., Tonkin, E., Whone, A., & Craddock, I. (2023). Indoor Localisation for Detecting Medication Use in Parkinson's Disease. ICLR 2023 (Under Review).



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