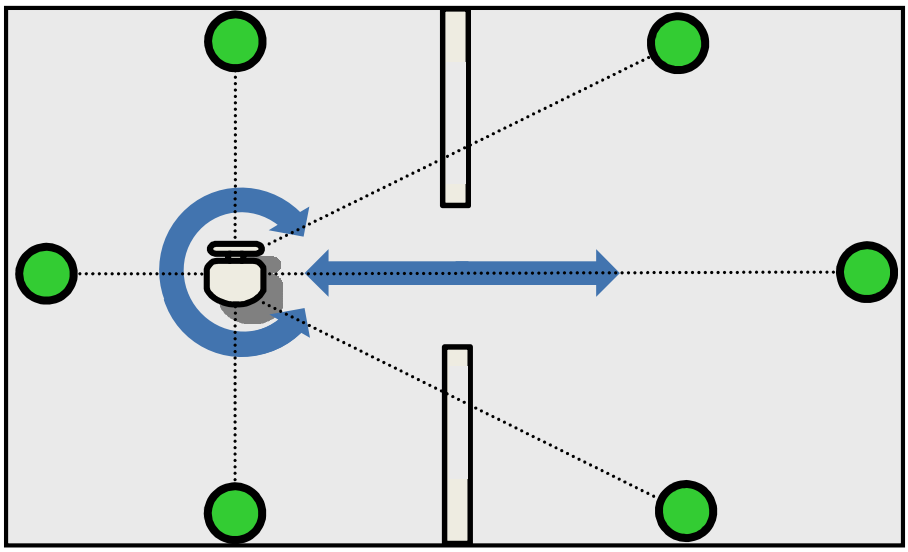
STUDENT PROJECT offered at the Institute for Neurobiology

EBERHARD KARLS UNIVERSITÄT TÜBINGEN

Student project in spatial cognition

Spatial Updating in Structured Environments



Background. Spatial memory keeps track of the ego-centric position of surrounding objects during observer motion. This process is called spatial updating and occurs automatically upon both turning and translational movements. It is generally interpreted in terms of a local, egocentric and map-like working memory with moves with the observer. In object recognition tasks, it has been shown that the spatial working memory may change discontinuously as the observer passes through a doorway, but not if moving the same distance within one room. It is unclear, if this reorganization of spatial working memory occurs also in spatial updating.

Project. The task of the current project is to design an experiment testing spatial updating during translatory movements within or between rooms. If reorganization of spatial working memory occurs when passing through a door, we expect that updating will be less accurate as in the between-rooms condition.

Methods. Simple virtual reality programming using the OculusRift head-mounted display, MatLab programing, psychophysics, statistical analysis.

Level. The project is currently planned as a BSc-project. Extension to a MSc-project is possible.

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References

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Radvansky, G.A., & Copeland, D. E. (2006). Walking through doorways causes forgetting: Situation models and experienced space, *Memory & Cognition, 34*, 1150-1156.

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