

# Following Behaviour in Virtual Reality

Keywords: Virtual reality, human behaviour, animation

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## Context

ReWaVE is a system that allows a user to explore unlimited virtual environments by real walking. This is achieved by tracking the head position and updating the virtual viewpoint accordingly which is then shown in a Head-Mounted Display.

To be able to explore virtual environments that are bigger than the available tracking space redirection is used. Redirection is the introduction of an imperceptible mismatch between the user's real movement and the movement shown in the virtual environment. To make the best use of redirection it is necessary to plan ahead to decide what kind of redirection should be applied. Of course the more is known about the user's future actions, the better redirection can be planned. On a guided tour through a museum or historic site for example, the user would follow a virtual tour guide and this should make planning redirection easier.

## Content

The goal of this thesis is to research how a user in a virtual environment will follow a virtual tour guide. This includes questions like how close will they follow the guide, do they look where the guide is pointing or how long the guide is able to capture the user's attention. To do this you need to research related literature on following behaviour and build a model for the user's following behaviour. Then you will implement a simple virtual tour guide and validate the expected behaviour in a user study.

This work can potentially be published at a Virtual Reality conference.

## Work Packages

- Research literature on human following behaviour
- Implement a virtual tour guide for a selected use-case
- Analyse the users' following behaviour
- Written report and presentation

## Requirements

To be considered for this thesis, you should have

- Programming skills, preferably in C#
- Interest in working with hardware and conducting experiments with users
- Knowledge of Unity3D is an advantage
- Strong communication and interpersonal skills

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## Information & Administration

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