*Talk on* <u>Monday, 1. July</u> *2024*
*in* <u>HS 425</u>
*Start: 12:15 (till 13.30)*
*The talk will be presented in English*

# Where Movement meets Cognition:

# Factors affecting gaze and walking decisions

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We make hundreds of decisions about where to look and where to step as we walk each day. Imagine, for instance, hiking in the mountains, or negotiating a busy shopping mall or sidewalk in a city centre. In these situations—and many others—a person must decide where and when to direct gaze to gain critical task-relevant information about the environment. They must also decide, based on the available information, where to place their feet and the path to walk to prevent a loss of balance and avoid objects and other individuals. But what factors influence these embodied decisions? In the first part of my talk, I will discuss our recent work that shows how environmental uncertainty, effort (or motor cost), and one's confidence in their ability to walk across upcoming terrain (i.e., self-efficacy) influences both gaze and walking decisions. In the second part of my talk, I will discuss our recent work on unscripted pedestrian collision avoidance behaviour in a busy urban environment to show what factors contribute to the decision to deviate walking trajectory, independent of whether a collision is probable. These collision avoidance studies leveraged deep learning algorithms to identify and extract walking trajectories of pedestrians and had unbiased raters characterize interaction details. Collectively, our research offers fundamental insights into human decision-making and may facilitate the development of more accurate computational models for gaze/walking decisions and realistic pedestrian movement.

Invited by: Tobias Heed