

**Talk title: The roads to walking stability**

**Abstract:**

In visually guided behavior, eye movement is thought to be goal-directed, representing the shift of attention from one area of interest to another. Since stroke survivors tend to gaze down while walking, it would be reasonable to assume that they are paying attention to the walking surface and/or their lower limbs. In healthy humans, downward gazing has been repeatedly observed when individuals are negotiating obstacles and/or when they are required to locate the next foothold/s position. These facts may lead to the conclusion that stroke survivors try to consciously control each step, in an attempt to maintain walking stability. Such control strategy, might be inadequate as it places excessive demands on a limited pool of cognitive resources. However, gaze behavior alone gives no indication as to what information is gathered and what function(s) this information serves. Therefore, it is unclear why stroke survivors tend to gaze down and whether it is 'good' or 'bad' strategy. In this presentation I will present a series of experiments conducted in an attempt to investigate the function(s) served by downward gazing behavior, and its relation to walking stability, as a potential avenue for walking rehabilitation in stroke survivors.

**Bio:**

I am a physical therapist and a PhD student at Ben-Gurion University. Interested mainly in stroke recovery and rehabilitation of walking. As part of this interest, I investigate gaze behavior and its role in the motor-control of walking. This work is conducted at the Laboratory for Rehabilitation and Motor-Control of Walking, at Ben-Gurion University, and the Translational NeuroRehabilitation Laboratory, at Adi-Negev, both are led by Dr. Simona Bar-Haim. Most of my work involves interdisciplinary collaborations, including the Computer Science department, Biomedical Engineering Department and the Industrial Engineering and Management Department. Throughout my PhD, I have received a generous grant from ABC robotics.