

Abstract: Attention allows us to monitor objects or regions of visual space and extract information from them to use for report or storage. Classical theories of attention assumed a single focus of selection but many everyday activities, such as playing video games, suggest otherwise. Nonetheless, the underlying mechanism which can explain the ability to divide attention has not been well established. Numerous attempts have been made in order to clarify divided attention, including analytical strategies as well as methods working with visual phenomena, even more sophisticated predictors incorporating information about past selection decisions. Virtually all the attempts approach this problem by constructing a simplified model of attention.

In this study, we develop a version of the existing Bayesian framework to propose such models, and evaluate their ability to generate eye movement trajectories. For the comparison of models, we use the eye movement trajectories generated by several analytical strategies. We measure the similarity between two trajectories using Normalized Scanpath Saliency metric.