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- Friday, July 11, 2008

Depth perception: Assumptions & adaptation

The human visual system provides an up-to-date 3D representation of our surroundings, despite highly complex and ambiguous incoming visual information. This talk focuses on two strategies that make this possible: (i) employing prior knowledge or assumptions about environmental statistics and (ii) adapting to changes in the environment.

In the absence of explicit light-source information, we assume a single, overhead light source to disambiguate shading. I will describe a series of studies investigating how this "light-from-above" prior influences shape and reflectance judgements and visual search performance. In addition, I will present work that explores how feedback drives adaptation, allowing observers to update visual priors and re-calibrate the mapping between visual cues and depth

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