Computational Modeling of Visual Selective Attention

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What is Selective Attention?

The ability to concentrate on a particular stimulus, event, or thought while excluding competing stimuli.

Visual Selective Attention

- Bottom-Up (exogenous) attention
- Top-Down (endogenous) attention

Approach for cognitive modeling of visual selective attention

Neuroscience

- Neuroscience
  - Understanding the underlying Neural Mechanisms of selection...

Cognitive Psychology

- Cognitive Psychology
  - Understanding the behavioral aspect of attention...

Computational modeling guided by Neuroscience

Potential applications

Medical applications
- ADHD
- Schizophrenia

Social applications
- Working safety..
- Car accidents avoidance

Human computer interactions applications
- Operating systems
- Computer networks

Computational intelligence
- Robotics
- Intelligent algorithms...

Evaluation of the model based on relevant behavioral experiments

The Attentional Blink


Perceptual Load theory


Attention & consciousness


Medical applications

- ADHD
- Schizophrenia

Social applications

- Working safety..
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Computational intelligence

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