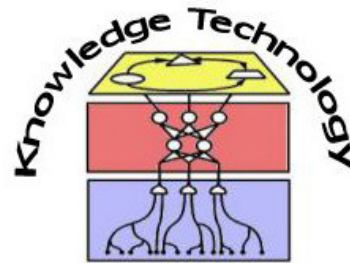


Robot visual-motor integration from scratch

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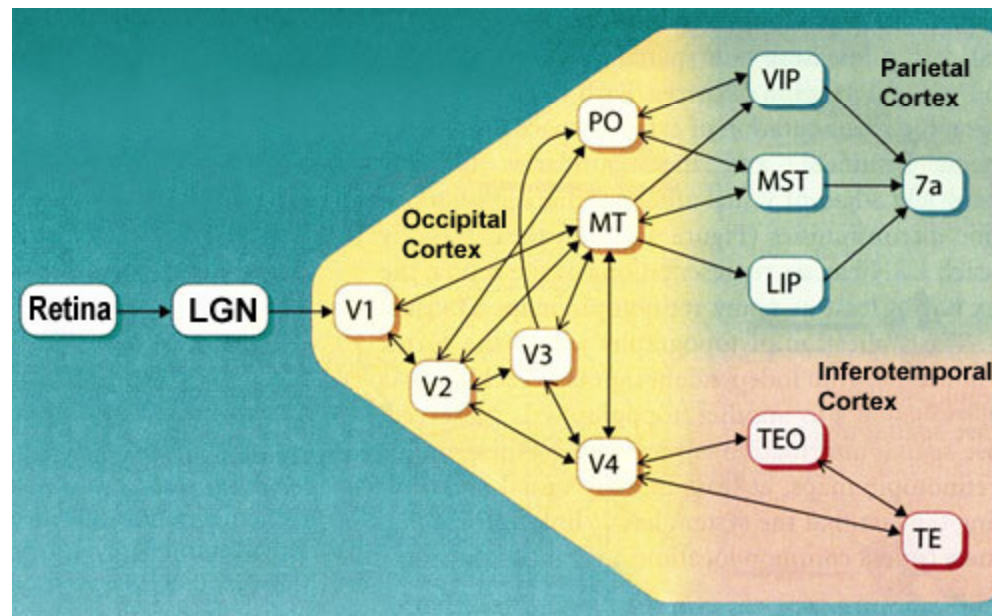
<http://www.informatik.uni-hamburg.de/WTM/>

General Target

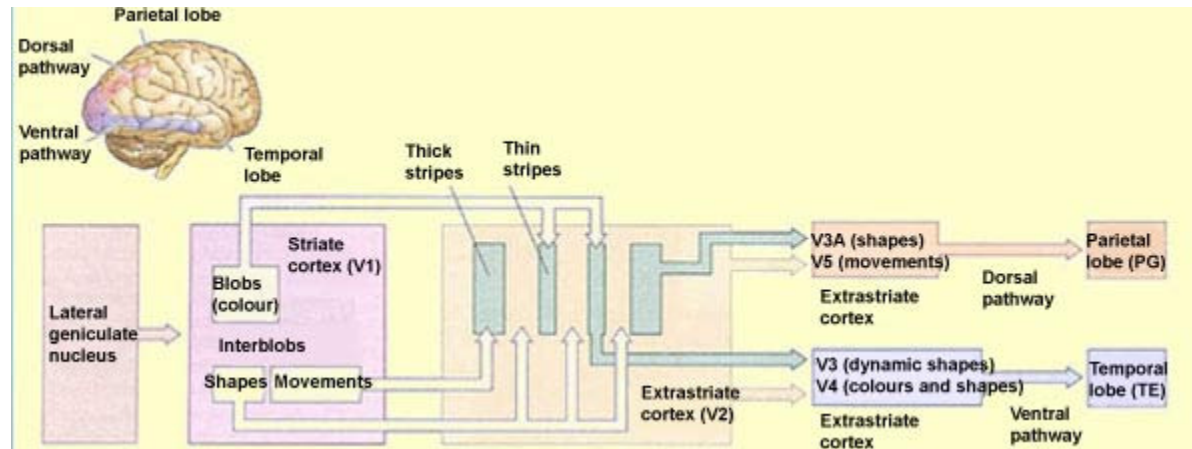
- Developing novel algorithms based on the functionality of the nervous system.

Vision system

- Developing learning algorithms based on the functionality of the visual system;
- The visual system is the main part of the central nervous system of human brain;



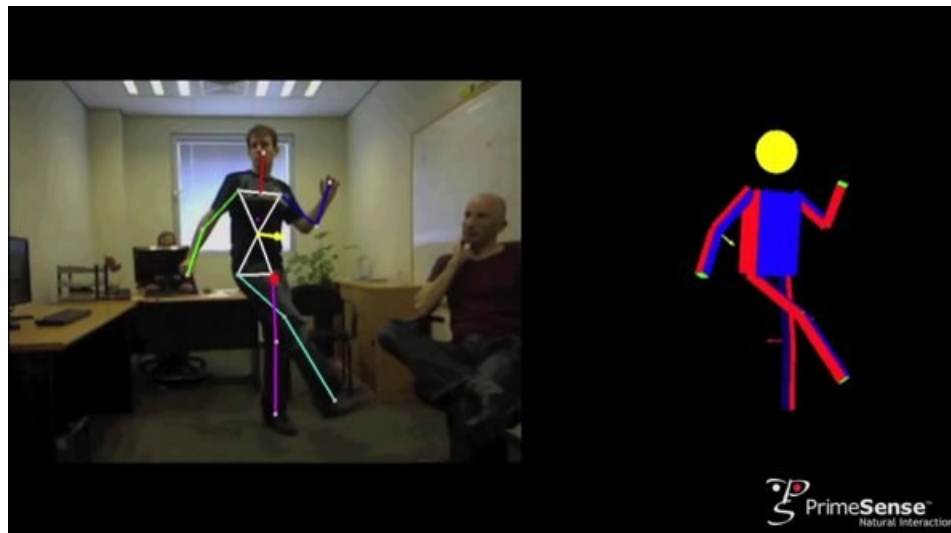
Visual streams separations



- Two-pathway dichotomy in visual system (Ungerleider and Mishkin 1982) .
- Particularly, the dorsal visual pathway is to guide in real time the actions that we direct at objects in the visual world.
- Predictive model of the dorsal pathway.

Robots with biologically inspired Perception

- Visual perception
e.g. predictive tracking with Kinect;
- Recognition of objects in the environment;
- Learning the world in a developmental way.



Robots with biologically inspired visual-motor integration

Robots can...?

- Integrate visual information to motor actions;
- Action understanding requires visual learning;
- Developmental learning of visual-motor integration



Learning the world

From „retinal waves“ to „perception“ to interaction
between objects

