Summary of Part 1: Basic Mechanisms

1. Biological realism
2. Distributed Representations
3. Inhibitory Competition
4. Bidirectional Activation Propagation
5. Error-driven Learning
6. Hebbian Learning

Micro vs Macro scales
- Micro = basic mechanisms common across brain areas
- Macro = differentiation, organization, and interaction of areas

Overview of macro scale before discussing cognitive abilities

In Transition
- From Part I: Basic Mechanisms
- To Part II: Cognition
  - [http://www.youtube.com/watch?v=VaQ66lDZ-08&feature=related](http://www.youtube.com/watch?v=VaQ66lDZ-08&feature=related)
    - Spontaneous brain activity
  - [http://www.youtube.com/watch?v=FZ3401XVYww&feature=related](http://www.youtube.com/watch?v=FZ3401XVYww&feature=related)
    - miracle

General Functions of Cortical Lobes

(how is this determined?)
Other (subcortical) Areas

- Hippocampus: rapid learning
- Thalamus: sensory input, attention
- Amygdala: emotion, fear/desire
- Basal Ganglia: motor control, gating of PFC
- Cerebellum: Coordinating movements
- Reward prediction system: dopamine release
Interacting cortical pathways

- http://www.youtube.com/watch?v=aFPtc8BVdJk
- http://api.ning.com/files/b1W7u0PTXrlLrzgzehOCSPfWxpw7op*hJYqBcQG*NLA/WheresWaldo.jpg
- http://www.scholarpedia.org/article/Visual_search

Tripartite Cognitive Architecture