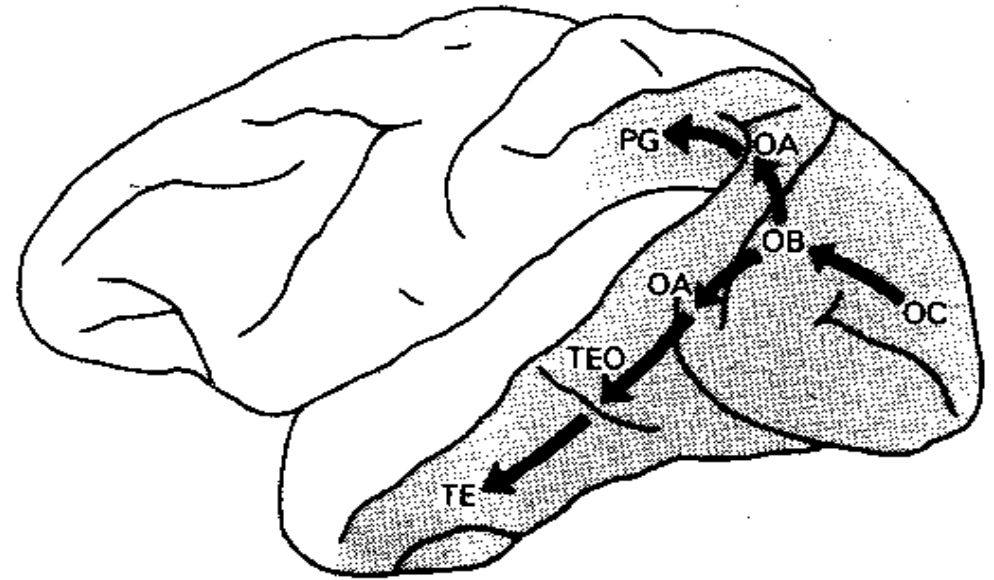
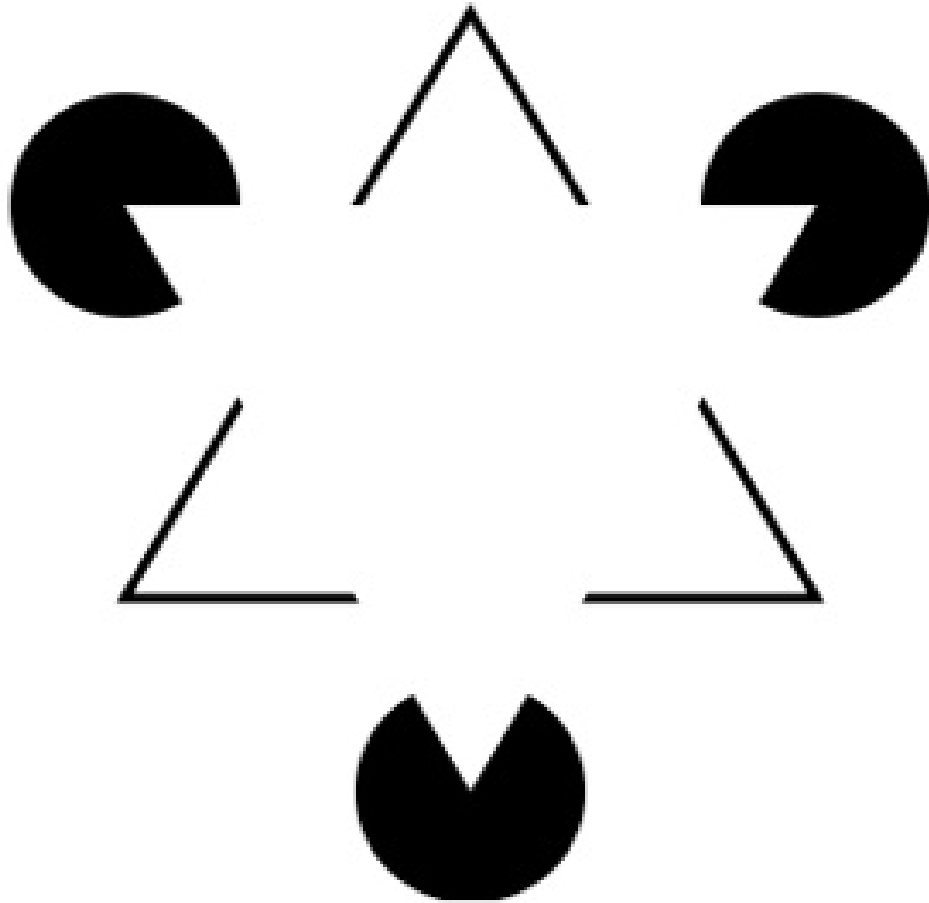


# Keypoints, Cell Assemblies and Cognitive Maps: A Connectionist Approach to Machine Vision

Nathan Merritt &  
Professor Eric Chown

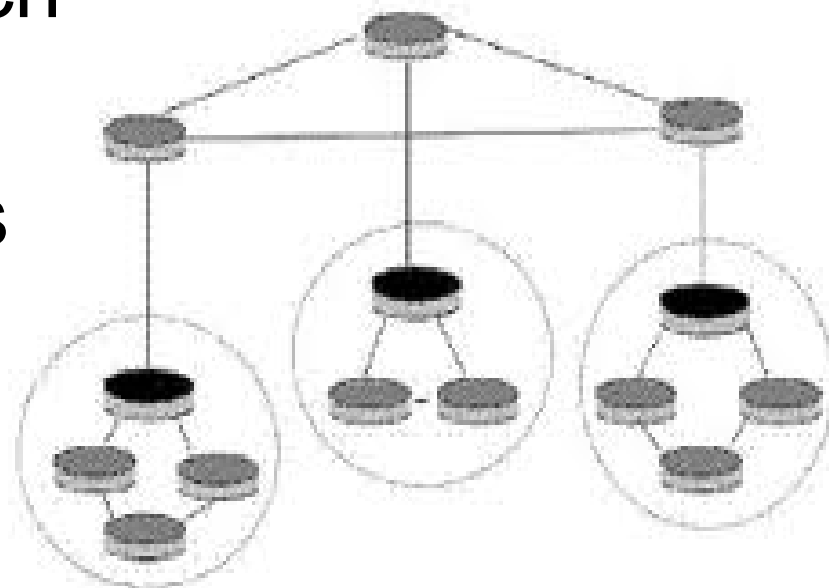


# Outline

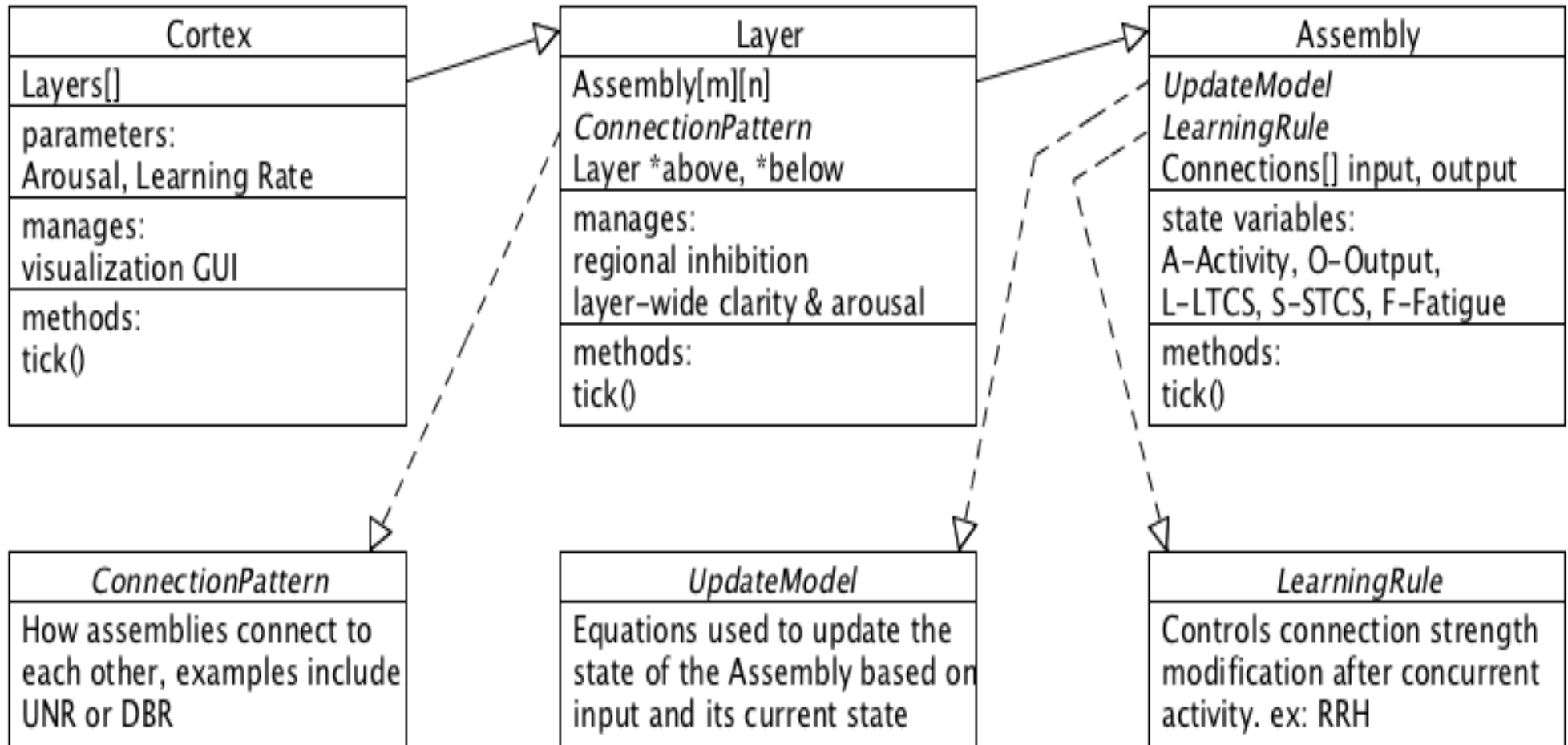
- Cell Assemblies in the brain are building blocks of perception and cognition
- Simulate a CA network using multiTRACE
- Provide the network with rich input through SIFT “keypoints”

# Cell Assemblies

- A collection of tightly associated neurons which can sustain activity
- Activity in a CA indicates conscious perception
- Layers of CAs form hierarchical networks, from perception to abstraction



# The multiTRACE Network



# SIFT Key Points

SIFT is a Scale-Invariant Feature Transform



From Lesperance RM-K (1990)

**Bowdoin**