

Questions

Homework03

Would the same results hold true if people were asked to rate the probability of error instead how confident they were in their correct answer?

What are some heuristics used to conclude the results from the earlier parts of section 2?

Where then are these modules located? Do other animals have modules?

Has there been any progress in explaining Darwinian modules as domain-specific computational vs. informational?

What could be an adaptive problem whose successful solution would have contributed to reproductive success?

Is there a way we can more systematically map the various “mental modules” that humans have at their disposal?

Under what evolutionary circumstances might a more general ability be selected for than more specific modules? What about novel problem solving

Is the motivation for Reciprocal altruism motivated solely by personal survival or as in the case of humans is it from some innate nature?

Since it seems easier for more people to determine cheaters, why is it that today Phishing is such a problem?

What conceptual criteria do you suggest for the exhaustive classification of cognitive errors?

What other kinds of cognitive errors do you think are there in addition to performance, competence, and formulation errors?

Homework04

Can human vision systems apply the object recognition system to their own process of object recognition?

Can couch potato vision be applied to the computer vision community, is it even possible?

Is the occlusion of two-dimensional objects handled differently from that of three-dimensional objects? If so, how differently is it handled?

Is there any difference between representing two-dimensional objects in two-dimensional plane and representing them in three-dimensional space? If so, how different are they?

Since an object-centered approach deals with edges and corners, what exceptions will need to be made for objects that are curved such as a sphere?

Since lighting is a factor that can affect a 3-D model that is portrayed in a 2-D image, would standardizing the image's gradient help or hinder the recognition process?

How do the OCR examples compare to the approaches of 3D object-recognition?

What is a major issue when building a object-recognition program?

Why are shapes so difficult to define?

Is it possible to have a function be able to define all possible shapes?

Are any of the systems of belief and truth wrong? Does neuroscience have any answers concerning truth and knowledge?

How do we account for problems that logical formalism (at least in the form expressed in the book) cannot express, such as uncertainty, probability, statements about imaginary worlds or false statements, and so on?

How distinct is the human "theory of the world" and the heuristics which depend on it? Are they really two separate things? (personal bias -- I doubt it)

The author mentions that perceptual rules are mainly innate. For a computer to be able to perceive like a human, will all the perceptual rules need to be programmed? Is that possible?

Can a computer be programmed to self-organize perceptual observation into rule, thus creating a theory of the world?

Homework105

Do people have totally different perceptual set? Or do people have some part in common?

What is the difference in constructing and testing hypothesis between concept-driven process and data-driven process?

Is there a stable view that people seem to see first than another in multistable views?

Why do some people see ambiguous concealed figures so quickly whereas some people who do not seem to see them at all?

Each neural model, or connectionist model, uses a specific format. In general these formats are based on a hypothesis on how the cognitive system might divide the work to do the task at hand. Is there a better way to model this using more direct physical information about the brain?

Humans have a lot of neurons, but neural models are often very successful using only a few neuron models (nodes). Is there a something we are missing? What are all these neurons for? Memory?

Why is the H&H model not frequently used as a system-level explanation of neurons?

What do hyperhyperboloids have to do with a neuron model?

If Hebb's law were modified to a more complex top-down process, would it make some of his laws true?

If both organisms were the same type, would it be necessary for classical condition to occur?

What other systems could be modeled to show relationships between degrees of freedom.

If observing cells cannot describe how information is stored in the brain is the collective system of all the cells the solution?