

## CS-661 AI Assignment 1

1. By introspection, make a rough order-of-magnitude estimate of the amount of information (in bits) passed to the brain by the various senses. For vision, for example, estimate the size of the main field of vision, the pixel density, the dynamic range, and the number of pictures transferred per second. If you have a biology text you can check for consistency, but no such technical information is required.

Based on the above estimates, how much information must the brain store in a day? A year? A lifetime? The brain contains about  $10^{10}$  neurons. Does the above estimate make sense?

2. Give arguments for and against the *intelligence* of a few of the following: chess-playing computers, scrabble-playing computers, C-language compilers, industrial robots, rocks, talking rocks, crystal balls, water, silicon, carbon, amino acids, DNA, amoebas, ants, bees, fish, birds, snakes, turtles, cats, dogs, dolphins, monkeys, people, an omniscient being.

Are any of these *conscious* ?