

Reflection on Heuristic Assignment

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This assignment highlighted a humans' computational abilities. A significant portion of the assignment was spent attempting to weigh the computational power required for a human to solve a crypto problem. There is a clear difference in the thought required for a human to solve a problem than for a machine.

Human seem to prefer to work in areas where they are given specific direction. The heuristics that required less originality from the human were much easier to solve. A machine, on the other hand, seems to prefer to an entire scan. While the machine can solve problems faster than the human, much of its computing power is wasted by going through numbers where they cannot possibly reach the solution. While humans are slower, they seem to waste less brain power by only attempting to solve problems using patterns they've seen before.

Heuristics attempt to approach the over computing of machines by giving them heuristics. This allows the machine to use pattern matching similar to humans, but the machine attempts these heuristics in a brute force matter. The machines cannot recognize simple solutions to problems. An example of this can be seen when a human is asked to make 0 from 3 2 1. A human is immediately able to recognize how close 2 is to 1, and that they make 3 through addition. A machine will only go through the problem the way its programmer tells it to though. A human can tell ignore division and multiplication in this case, but a machine needs to step through its preprogrammed steps to make sure it's not possible. This does not mean machines can't progress though.

The human mind at some point in its life does not know which steps it should take either. It is not until we've practiced something many times that we can start using our "automatic" pattern matching. We first start by seeing the trees in the forest, then work our way out until we see the entire forest itself. Machines appear to be stuck in the infant or maybe even young toddler phase of humans. Machines can work on their task, but have difficulty with seeing what they're working on. If machines could recognize their work, and use previous information to progress, they could begin to advance their intelligence to maybe an elementary human level.