

Assignment 3 AI

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Moravec's Paradox (Summary)

Moravec's paradox describe that it require **less effort or computation** for developing **reasoning or logical skill** whereas it takes a **great computation** resources for making **sensorimotor** skill. According to Moravec it easy to make computer learn adult level performance on intelligence tests or playing checkers but it's rather an impossible task to provide computer the ability of one year's mobility and perception.

Moravec suggests that evolution might be one plausible solution for the paradox. All human abilities are implemented physiologically, through the use of equipment created by **natural selection**. Natural selection has favoured **design enhancements and optimizations** during the course of their evolution. Natural selection has had more opportunity to enhance a skill's design as it has aged. Because **abstract cognition** is a relatively **new concept**, we should not expect it to be very efficient in its implementation. Examples of skills that have been evolving for millions of years: recognizing a face, moving around in space, judging people's motivations etc. Whereas skills such as mathematics, engineering, games, logic and scientific reasoning are more recent.

Many famous researchers thought that once the "hard" issues were (nearly) solved, the "simple" problems of vision and commonsense reasoning would follow. They were mistaken for a variety of reasons, one of which is that they are not easy issues at all, but rather extremely tough ones. The fact that they had solved difficulties like logic and mathematics was immaterial because machines, has a relatively easy time with these kind of challenges. Brooks pursue a novel approach to AI and robotics research. He made the decision to create intelligent machines "There is **no cognition**. It's only a matter of **sensing and acting**. That is all I would construct, ignoring what has usually been conceived of as artificial intelligent intellect." This new path, which he dubbed "**Nouvelle AI**," had a significant impact on robotics and AI research.

The main lesson from past years of AI research is that the **hard problems are easy** and the **easy problems are hard**.